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1986

United States
Department of
Agriculture

Forest Service
Southern Region

North Carolina

Land and Resource Management Plan

1986–2000

Croatan & Uwharrie
National Forests

UWHARRIE NATIONAL FOREST

CROATAN NATIONAL FOREST

(OTHER SIDE)

FOREST PLAN

NORTH CAROLINA

SUPERVISOR'S OFFICE

NATIONAL FORESTS IN NORTH CAROLINA
P.O. BOX 2750
ASHEVILLE, N.C. 28802
PHONE: 704-253-2352
(50 South French Broad Ave.)

CROATAN NATIONAL FOREST

DISTRICT RANGER
U.S. FOREST SERVICE
435 THURMAN ROAD
NEW BERN, N.C. 28560
PHONE: 919-638-5628
(1 mile south of New Bern on U.S. 70)

KEY MAP

LEGEND

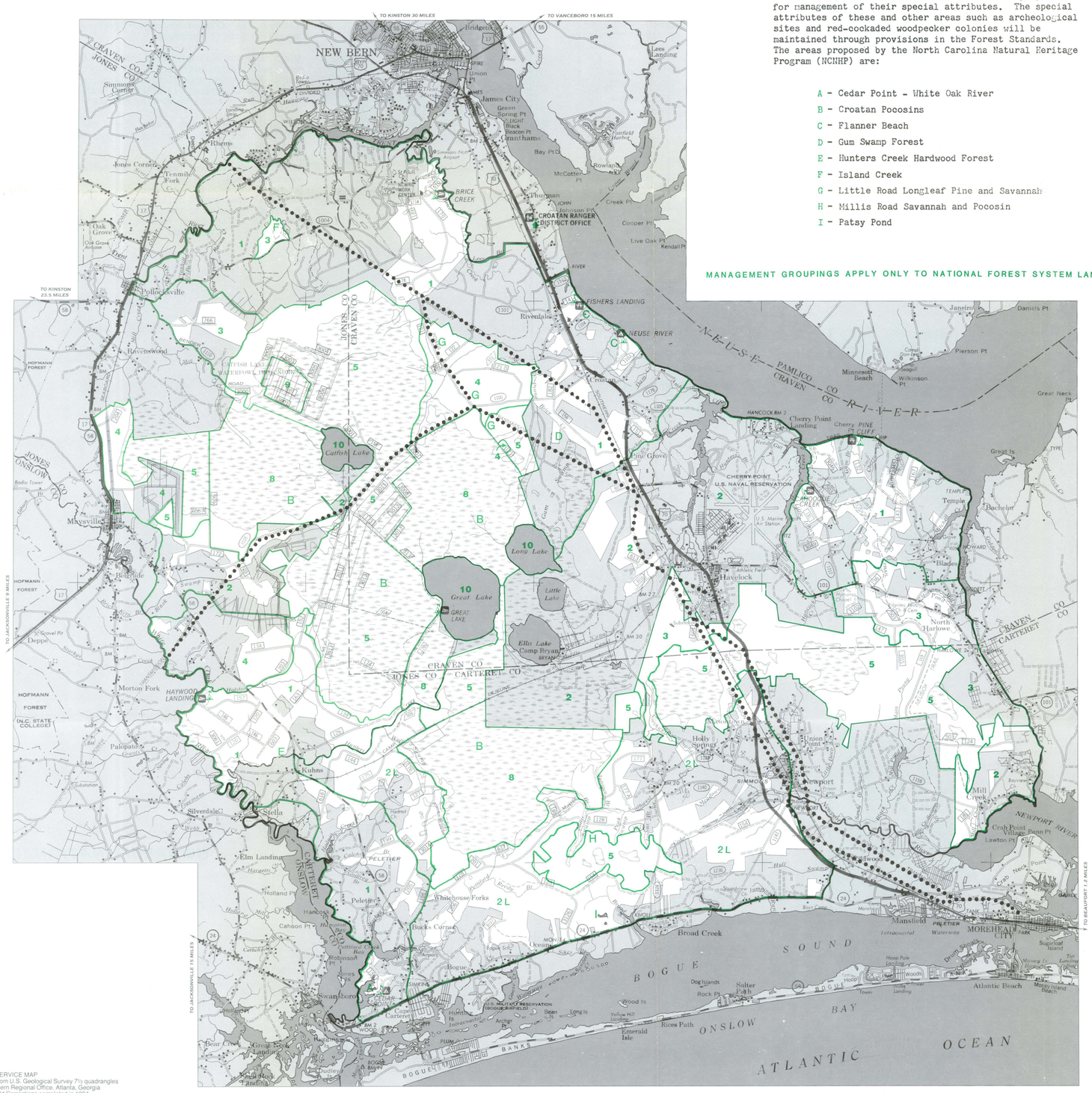
- NON NATIONAL FOREST LAND
- 4 MANAGEMENT AREA
- RECREATION SITE
- UTILITY CORRIDOR

SPECIAL INTEREST AREAS

Nine areas on the Croatan National Forest are proposed for management of their special attributes. The special attributes of these and other areas such as archeological sites and red-cockaded woodpecker colonies will be maintained through provisions in the Forest Standards. The areas proposed by the North Carolina Natural Heritage Program (NCNHP) are:

A - Cedar Point - White Oak River
B - Croatan Pocosins
C - Flanner Beach
D - Gum Swamp Forest
E - Hunters Creek Hardwood Forest
F - Island Creek
G - Little Road Longleaf Pine and Savannah
H - Millis Road Savannah and Pocosin
I - Patsy Pond

MANAGEMENT GROUPINGS APPLY ONLY TO NATIONAL FOREST SYSTEM LANDS



U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R. MAX PETERSON, CHIEF

CROATAN NATIONAL FOREST

NORTH CAROLINA

1984

Scale 1:126,720

1 ½ 0 1 2 3 4 5 Miles
1 ½ 0 1 2 3 4 5 Kilometers

LEGEND

- National Forest Boundary
- National Forest Land
- Other Federal Land
- State Land
- Waterfowl Impoundment
- Ranger District Office
- Forest Service Facility
- Horizontal Control Station
- Lookout Tower
- Primary Highway
- Secondary Highway
- Improved Road
- Primitive Road
- Trail
- U. S. Highway
- State Highway
- Secondary State Highway
- Forest Route
- Forest Trail
- Church School Cemetery
- Quarry
- Pocosin and Other Wetlands

FOREST SUPERVISOR'S OFFICE
ASHEVILLE, NORTH CAROLINA

FOREST SERVICE MAP
Compiled from U.S. Geological Survey 7½ quadrangles in the Southern Regional Office, Atlanta, Georgia in 1982. Field Corrections completed in 1984. Status current as of March 1984.

Polyconic projection
1927 North American datum

Longitude west from Greenwich

MANAGEMENT AREA DESCRIPTION

1 Commercial timber and car-touring areas. Stands thinned and harvested at 40- to 80-years for high-quality sawtimber. Most roads open to public. Animals needing young stands favored. Off-road vehicles permitted on designated routes.

2 Old timber and car-touring areas. Timber harvested for wood and wildlife habitat. Many old trees left. Animals needing old stands favored. Off-road vehicles permitted on designated routes.

2 L Old timber and car-touring area of longleaf pine on the Croatan. Timber harvested for wood and wildlife habitat. Red-cockaded woodpecker favored. Off-road vehicles permitted on designated routes.

3 Commercial timber and hiking. Stands thinned and harvested at 40- to 80-years for high-quality sawtimber. Many roads closed to public. Animals needing young stands favored. No off-road vehicles. Visitor use mainly on foot or horseback.

4 Old timber and hiking. Trees harvested for wood and wildlife habitat. Old trees left. Few roads, and all closed to motorized use. Animals needing old stands favored. Visitor entry mainly on foot or horseback.

5 Modified natural areas. Trees not cut for timber production. Openings created for wildlife. Most roads closed. Little human disturbance of animals. Visitor entry on foot or horseback.

6 Administrative facility areas. Places for offices, work centers, and special uses such as utility corridors.

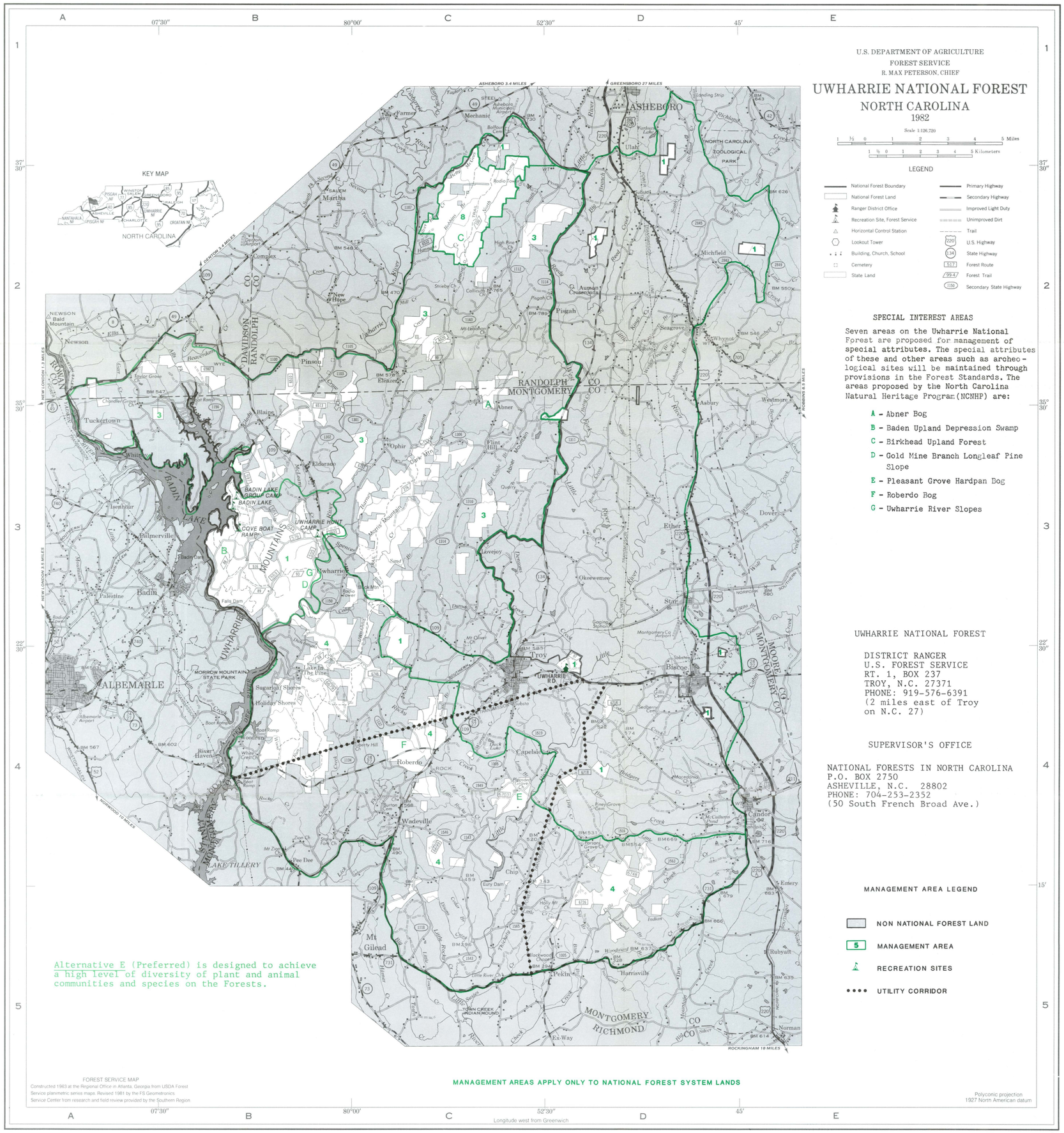
7 Developed recreation, research, and cultural resource areas.

8 Officially designated "Wilderness Areas" Birkhead Mountains on the Uwharrie; Sheep Ridge, Pond Pine, Pocosin, and Catfish Lake South on the Croatan.

9 Waterfowl impoundments. Catfish Lake Waterfowl Impoundment on the Croatan.

10 Recreation lakes. Catfish, Great, and Long Lakes on the Croatan.

Alternative E (Preferred) is designed to achieve a high level of diversity of plant and animal communities and species on the Forests.



U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R. MAX PETERSON, CHIEF

UWHARRIE NATIONAL FOREST
NORTH CAROLINA
1982

Scale 1:126,720

1 ½ 0 1 2 3 4 5 Miles
1 ½ 0 1 2 3 4 5 Kilometers

LEGEND

- National Forest Boundary
- National Forest Land
- Ranger District Office
- Recreation Site, Forest Service
- Horizontal Control Station
- Lookout Tower
- Building, Church, School
- Cemetery
- State Land
- Primary Highway
- Secondary Highway
- Improved Light Duty
- Unimproved Dirt
- Trail
- 220 U.S. Highway
- 134 State Highway
- 517 Forest Route
- 99-A Forest Trail
- 1159 Secondary State Highway

SPECIAL INTEREST AREAS

Seven areas on the Uwharrie National Forest are proposed for management of special attributes. The special attributes of these and other areas such as archeological sites will be maintained through provisions in the Forest Standards. The areas proposed by the North Carolina Natural Heritage Program (NCNHP) are:

- A - Abner Bog
- B - Baden Upland Depression Swamp
- C - Birkhead Upland Forest
- D - Gold Mine Branch Longleaf Pine Slope
- E - Pleasant Grove Hardpan Bog
- F - Roberdo Bog
- G - Uwharrie River Slopes

UWHARRIE NATIONAL FOREST

DISTRICT RANGER
U.S. FOREST SERVICE
RT. 1, BOX 237
TROY, N.C. 27371
PHONE: 919-576-6391
(2 miles east of Troy
on N.C. 27)

SUPERVISOR'S OFFICE

NATIONAL FORESTS IN NORTH CAROLINA
P.O. BOX 2750
ASHEVILLE, N.C. 28802
PHONE: 704-253-2352
(50 South French Broad Ave.)

MANAGEMENT AREA LEGEND

- NON NATIONAL FOREST LAND
- 5 MANAGEMENT AREA
- RECREATION SITES
- •••• UTILITY CORRIDOR

Alternative E (Preferred) is designed to achieve a high level of diversity of plant and animal communities and species on the Forests.

MANAGEMENT AREAS APPLY ONLY TO NATIONAL FOREST SYSTEM LANDS

FOREST SERVICE MAP
Constructed 1963 at the Regional Office in Atlanta, Georgia from USDA Forest Service planimetric series maps. Revised 1981 by the FS Geometronics Service Center from research and field review provided by the Southern Region.

Polyconic projection
1927 North American datum

Longitude west from Greenwich

MANAGEMENT AREA DESCRIPTION

1 Commercial timber and car-touring areas. Stands thinned and harvested at 40- to 80-years for high-quality sawtimber. Most roads open to public. Animals needing young stands favored. Off-road vehicles permitted on designated routes.

3 Commercial timber and hiking. Stands thinned and harvested at 40- to 80-years for high-quality sawtimber. Many roads closed to public. Animals needing young stands favored. No off-road vehicles. Visitor use mainly on foot or horseback.

4 Old timber and hiking. Trees harvested for wood and wildlife habitat. Old trees often left. Few roads, and all closed to motorized use. Animals needing old stands favored. Visitor entry mainly on foot or horseback.

6 Administrative facility areas. Places for offices, work centers, and special uses such as utility corridors.

7 Developed recreation, research, and cultural resource areas.

8 Officially designated "Wilderness Areas". Birkhead Mountains on the Uwharrie; Sheep Ridge, Pond Pine, Pocosin, and Catfish Lake South on the Croatan.

UWHARRIE NATIONAL FOREST

CROATAN NATIONAL FOREST
(OTHER SIDE)

FOREST PLAN

NORTH CAROLINA

PREFACE

LAND AND RESOURCE MANAGEMENT PLAN

CROATAN AND UWHARRIE NATIONAL FORESTS

May, 1986

This National Forest Land and Resource Management Plan (Plan) was developed to direct the management of the Croatan and Uwharrie National Forests. The goal of the Plan is to provide a management program reflective of a mixture of management activities that allow use and protection of the Forest resources; fulfill legislative requirements; and address local, regional, and national issues and concerns. To accomplish this, the Forest Plan:

- Establishes the management direction and goals for the Forests for the next 15 years;

- Specifies the standards, approximate timing, and location for practices necessary to manage the Forests; and

- Establishes the monitoring and evaluation required to ensure that the direction is carried out, and to evaluate the reliability of estimated outputs and effects.

The Plan will be reviewed (and updated if necessary) at least every five years. It is valid for a maximum of 15 years and normally will be revised on a 10-15 year cycle.

Preparation of the Plan is required by the Forest and Rangeland Renewable Resources Planning Act (RPA) as amended by the National Forest Management Act (NFMA). Assessment of its environmental impacts is required by the National Environmental Policy Act (NEPA) and the implementing regulations of NFMA (36 CFR 219). The Plan replaces all previous resource management plans prepared for the Forests. Upon approval, all subsequent activities affecting the Forests will be brought into compliance with the Plan. In addition, all permits, contracts and other instruments for the use and occupancy of National Forest System lands must conform to the Plan.

The Regional Forester's decision to implement this Plan may be appealed under the regulations of Title 36 of the Code of Federal Regulations Section 211.18.

Comments or suggestions regarding this Plan should be sent to:

Forest Supervisor
National Forests in North Carolina
Post and Otis Streets
PO Box 2750
Asheville, NC 28802

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National FS Library
USDA Forest Service
240 W Prospect Rd
Fort Collins CO 80526

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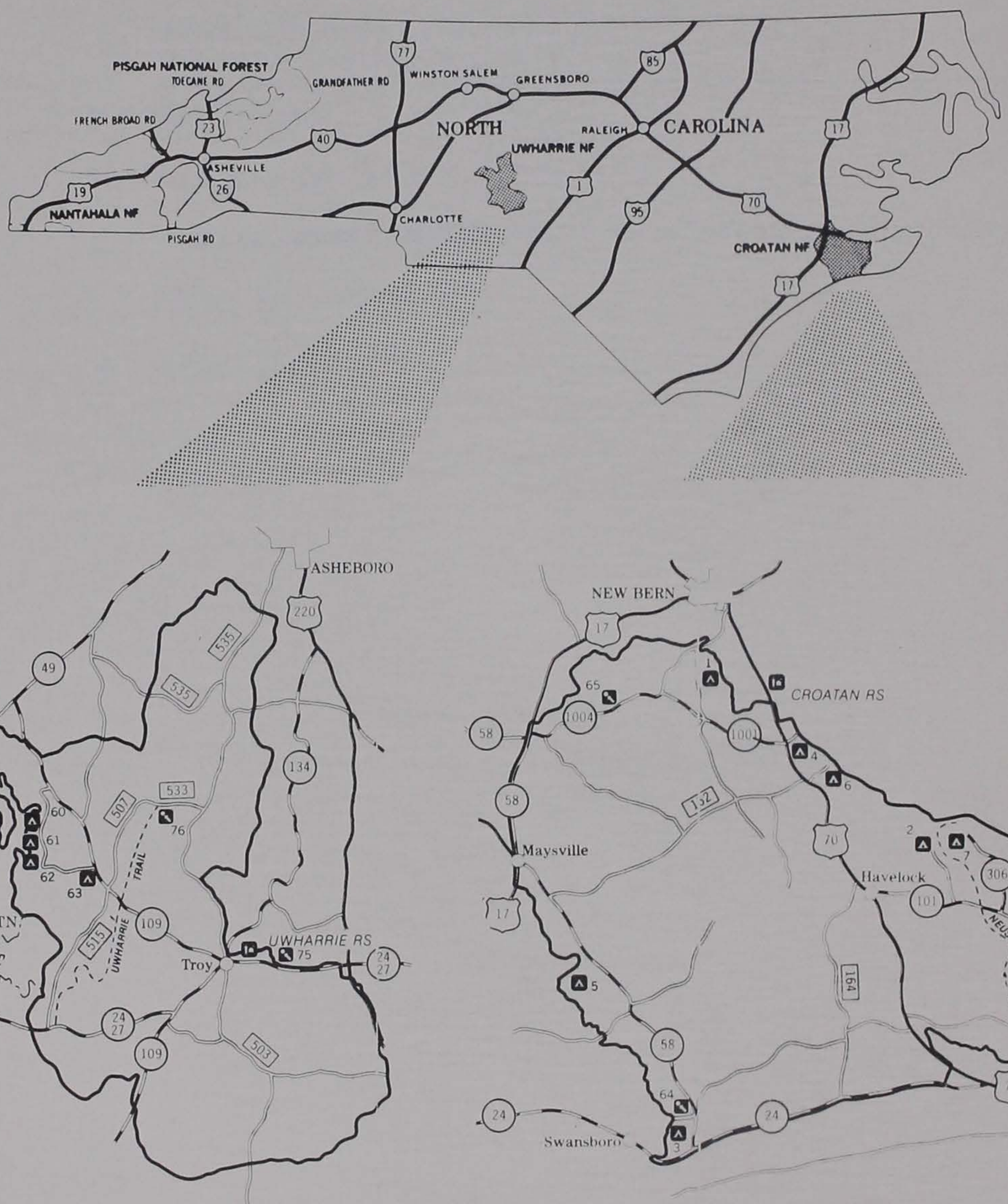
The Croatan and Uwharrie National Forests, located in the coastal plain and piedmont sections of North Carolina, make up the Forest area described in this Plan. Approximately 203,700 acres of National Forest System land -- 157,000 acres for the Croatan and 46,700 for the Uwharrie -- provide a variety of ecological types, plants, animals, mineral deposits, and recreational opportunities. The Forests are described in detail in Chapter III of the accompanying EIS.

Croatan/Uwharrie National Forests

NATIONAL FORESTS IN NORTH CAROLINA



CHAPTER I

FOREST PLAN INTRODUCTION

This chapter describes the purpose and structure of the Plan and the relationship of the Plan to other documents.

PURPOSE OF THE FOREST PLAN

The Forest Plan guides natural resource management activities and establishes management standards for the Croatan and Uwharrie National Forests. It describes care and protection of the land, resource management practices, outputs of goods and services, and the availability and suitability of lands for varied purposes from 1986 to 2000.

The Forest Plan follows the National Forest Management Act (NFMA), the Regulations, and other guiding documents. Goals, objectives, standards, and practices are statements of the Plan's management direction. Outputs of goods and services describe the rate of Plan implementation.

RELATIONSHIP OF THE FOREST PLAN TO OTHER DOCUMENTS

Development of this Forest Plan is within the framework of Forest Service regional and national planning. The RPA Program sets the national direction and output levels for National Forest System (NFS) lands, based on suitability and capability information for each Forest Service Region. Each Region tentatively distributes its share of the national production levels to Forests. This assignment is based on the information gathered at the Forest level, and Forests validate their ability to provide these levels of goods and services. Each Forest Plan provides a basis for validating or changing the production levels assigned by the Region.

Regional Guide

The Regional Guide for the South provided regional standards for the Forests. These are incorporated in the Forest Plan.

Environmental Impact Statement

The Forest Plan is the selected alternative, and is based on the considerations addressed in the accompanying Environmental Impact Statement (EIS) and described in the record of decision for the EIS. The planning process and the analysis procedure that were used in developing this Plan and the other alternatives that were considered are described or referenced in the EIS.

PLAN STRUCTURE

The Plan provides two levels of direction, Forest-wide management direction and specific direction for each management area. Direction is described in terms of goals, objectives, and standards.

The Plan structure is:

Chapter I provides an introduction to the Forest planning process.

Chapter II shows how the Plan addresses and responds to the major public issues, management concerns and opportunities to use and develop resources. A comparison of the Plan's outputs of goods and services to demand conditions is provided in Appendix C.

Chapter III contains the Forest-wide multiple use goals, objectives, and standards. It also provides a description of each management area and direction for its management.

Chapter IV discusses implementation of the Plan. It provides guidance for project planning and describes monitoring and evaluation activities. Research that could benefit future management of the Forests is also discussed.

Chapter V contains appendices that provide supplemental information for the Plan. A glossary including terms used in the Plan is provided as Chapter VII of the accompanying EIS.

Throughout the Plan, information that pertains only to the Croatan National Forest is noted by solid line brackets and the letter "C". Information pertaining only to the Uwharrie National Forest is noted by dashed line brackets and the letter "U".

Additional information is in the Forest planning records which are available for review at the National Forests in North Carolina Supervisor's Office, Asheville, North Carolina.

CHAPTER II

PLAN RESPONSES TO ISSUES, CONCERNS, AND OPPORTUNITIES

This chapter contrasts the present situation with the Plan's treatment of the eight major issues identified in the planning process. The eight issues are combinations of public issues, management concerns, and resource development opportunities.

PLAN RESPONSES TO ISSUES

Transportation

"What is the transportation system necessary for the use and management of the Forests and how should it be managed for public vehicular travel?"

Present Situation

Roads, generally built to harvest timber, meet standards that provide environmental protection but often are not built for safe public vehicular use because such roads are costly to build. Most local roads are closed after harvesting is completed to reduce human disturbance to wildlife, environmental damage, and maintenance costs. Most of the older Forest Service roads are open to the public even though new roads are closed.

C At present, about 2 miles of Forest Service road are being built each year on the Croatan. Approximately 85% of Forest Service roads, 170 miles of road, are open for driving through the Forest.

U On the Uwharrie, about 1 mile of road is being built each year. Approximately 54% of all Forest Service roads, 56 miles of road, are open for driving. Because of the intermixed pattern of public and private land, the Uwharrie also includes a large number of state and county roads on which the public can drive through the Forest.

Plan

Adherence to road construction and maintenance standards will continue to provide appropriate environmental protection. These standards will also provide safe public travel on Forest Service roads that are open for public vehicular use. Most newly constructed roads will be closed to public vehicles, primarily to reduce human disturbance to wildlife.

C About 3 miles of Forest Service road will be built each year on the Croatan to access areas that have not been harvested in recent years. Approximately 170 miles of Forest Service road will be open for driving through the Forest.

U On the Uwharrie, approximately 2 miles of Forest Service road will be built each year. About 56 miles will be open for driving through the Forest.

Lands

"What types of lands, if any, should be acquired or exchanged within the proclamation boundaries of the Forests?"

Present Situation

Land is acquired to protect wilderness, to increase efficiency through consolidation of ownership, to provide water-based recreation and to increase acreage for wildlife management. Land is normally acquired on a willing-seller, willing-buyer basis. Lands exchanged into private ownership are better suited for that purpose and can be taken out of public ownership without significant loss of public benefits.

Approximately 70 acres per year are purchased on the Croatan and 220 are acquired through exchange. C

On the Uwharrie, about 120 acres per year are acquired through purchase and 90 acres through exchange. U

Plan

Land will be acquired to protect wilderness, to increase acreage for wildlife management and to protect special areas identified by the North Carolina Natural Heritage Program. Secondary priorities will be to acquire lands that allow the Forest Service to increase efficiency through land consolidation and to provide water-based recreation. Land will continue to be purchased primarily on a willing-buyer, willing-seller basis.

Approximately 150 acres per year are planned to be purchased for the Croatan and 500 acres acquired through exchange. C

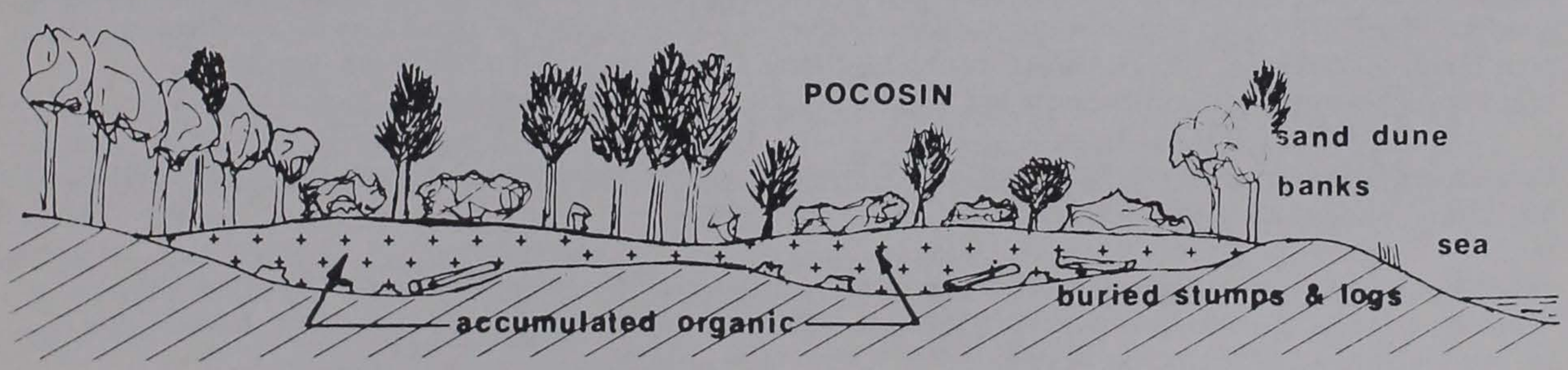
On the Uwharrie, about 1,000 acres per year are planned to be purchased and 60 per year acquired through exchange. Limited exchanges are planned until the land purchase program provides a more effective public land ownership pattern. U

Pocosins

"What is the most appropriate management direction for the pocosins on the Croatan National Forest?"

Present Situation

Presently 30,000 acres of the 95,000 acres of pocosin is preserved in Wilderness. No surface water management for timber production is done. Of the 5,900 acres with potentially mineable peat, 5,500 acres are available for development with standard stipulations on mining. The natural environment of the pocosins is protected or improved through the control and use of fire. C



C

Plan

The pocosin will be preserved. None of the pocosin will be classed as suitable for timber production; no surface water management for timber production will be done. Mining of peat is not compatible with the goals of the Plan and will not occur. The natural environment of the pocosins will be protected or improved through the control and use of fire.

Wildlife and Fish

"How much and what type of wildlife habitat should be provided on the Forests?"

Present Situation

The Forests are managed to assure diversity and viable (self-sustaining) populations of native animals. Habitat is provided through the timber program for animals preferring early stages of plant growth. Habitat is also provided for animals preferring older stages of plant growth and freedom from human disturbance. In cooperation with the North Carolina Wildlife Resources Commission, openings are created and maintained, and controlled fire used to enhance animal food supplies.

Streams and lakes provide habitat for fish. Adherence to standards for water quality, road building, and timber harvesting ensures protection of fish habitat.

Federally listed threatened and endangered animals, including the red-cockaded woodpecker on the Croatan, are protected; the Forests are managed to the extent practicable so that these animals will no longer be endangered in the future.

Animals preferring older stages of plant growth and freedom from human disturbance, such as black bear, are favored primarily in the pocosins of the Croatan. Direct habitat improvements to enhance animal food supplies are provided on about 1,000 acres per year.

C

Animals preferring early stages of plant growth, such as white-tailed deer and bobcat, are favored on the Uwharrie, although some habitat is also provided for animals preferring older stages of plant growth and freedom from human disturbance. Direct habitat improvements to enhance animal food supplies are provided on about 880 acres per year.

U

Plan

The Forests will be managed to assure diversity and viable populations of native animals. Habitat will be provided for increased populations of animals which prefer older stages of plant growth, such as black bear on the Croatan, wild turkey, raccoon, and pileated woodpecker, by increasing the average age of trees in the Forests and by managing an increased number of acres as unsuitable for timber production. Closing most of the newly constructed roads will reduce human disturbance to bear and turkey.

Habitat will continue to be provided, through coordination with the timber management program, for animals preferring younger stages of plant growth, such as deer and bobcat. Coordination with the timber management program will also provide openings and leave trees producing hard mast, such as acorns, for many animals. Direct habitat improvements will increase, including the number of wildlife openings that will be constructed. In cooperation with the North Carolina Wildlife Resources Commission, openings will be maintained, and controlled fire used to enhance animal food supplies.

Streams and lakes will continue to provide habitat for fish; fishing access and fish habitat improvements, such as stream deflectors, log structures, stream cover, and lake fish attractors, will increase. Adherence to standards for water quality, road building, and timber harvesting will continue to ensure protection of fish habitat.

Threatened, endangered, and sensitive animal species will be protected; the Forests will be managed to the extent practicable so that these animals will no longer be endangered in the future.

C Minimum rotations of 80 years in loblolly and shortleaf pine and 100 years in longleaf pine will provide suitable habitat for the red-cockaded woodpecker on the Croatan. Direct habitat improvements will improve food supplies for wildlife on approximately 6,600 acres per year. About 95,000 acres of pocosin will be free from human disturbance which will enhance habitat for black bear.

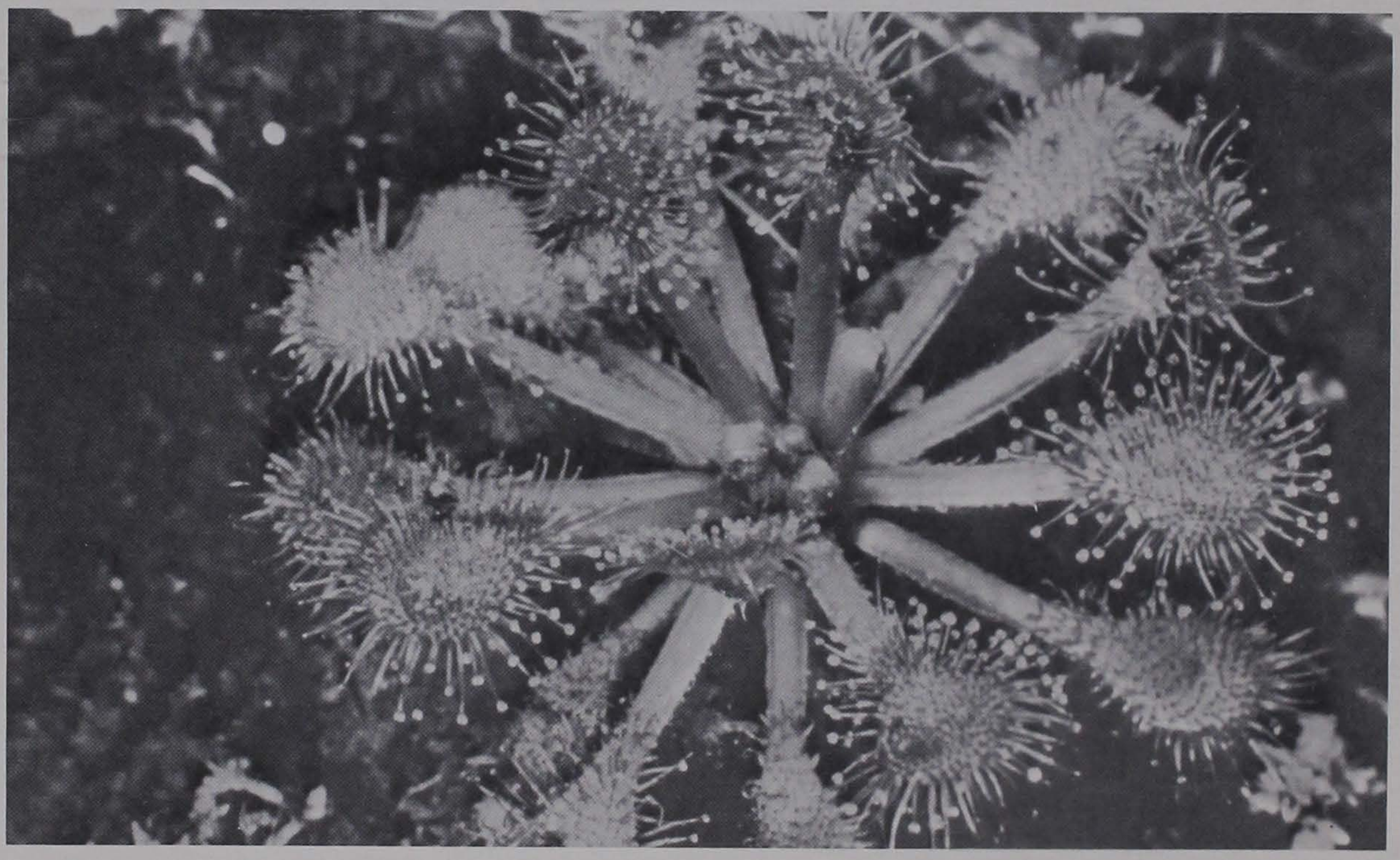
U On the Uwharrie, direct habitat improvements will improve food supplies for wildlife on approximately 1,600 acres per year. Wildlife habitat will also be enhanced through timber harvesting practices and prescribed burning.

Vegetation

"For what purposes and by what methods should the vegetation be managed on the Forests?"

Present Situation

Plant communities are enhanced by a number of activities including the use of controlled fire. Plants being reviewed for listing as threatened or endangered are also protected in areas being harvested by practices such as prescribed burning, avoidance of disturbance, and through adherence to timber harvesting and road building standards. To the extent practicable, the Forests are managed so that these plants will not be endangered in the future.



The Forests are managed to promote healthy growth by harvesting sparse and low quality areas, planting genetically improved seedlings to regenerate pine, and choosing proper species for release in hardwood areas.

Populations of Venus' flytrap and other insect-eating plants on the Croatan are increased by the controlled use of fire and other ground disturbing activities.

Timber is produced from a small portion of the 91,300 acres classed as suitable for timber production on the Croatan. Approximately 4,100,000 board feet of timber are produced annually from clearcutting 320 acres and thinning 500 acres. Surface water management for timber production occurs on approximately 20 acres per year on the Croatan. C

On the Uwharrie, timber production occurs annually on a small part of the 41,300 acres classed as suitable for timber production. About 5,500,000 board feet are produced annually from clearcutting 475 acres and thinning 300 acres. U

Plan

Plant communities will continue to be enhanced by a number of activities including an increase in the use of controlled fire. All plants being reviewed for listing as threatened or endangered, and sensitive plants, will be protected; to the extent practicable, the Forests will be managed so that these plants will not be endangered in the future. The unique characteristics of recognized special interest areas will be maintained.

The Forests will tend toward an older average age but will be managed to economically utilize harvested trees and maintain tree species diversity.

Populations of Venus' flytrap and other insect-eating plants on the Croatan will continue to be increased by the controlled use of fire and other ground disturbing activities. Nine special areas on the Croatan will be registered with the North Carolina Natural Heritage Program, and their unique characteristics will be maintained.

The Croatan will be managed to promote healthy growth on 30,300 acres classed as suitable for timber production. Rotations for pines may increase the potential for insect and disease attack, due to the older average age of the trees. This will make management for healthy growth more difficult. Approximately 3,490,000 board feet per year will be harvested; about 330 acres will be regenerated each year by clearcutting and 35 per year by shelterwood. Thinning to improve the growth of the trees that are left standing will occur on about 315 acres per year. No surface water management for timber production will occur. C

On the Uwharrie, the unique characteristics of seven special areas, including upland ponds, will be maintained. These areas will be registered with the North Carolina Natural Heritage Program.

Approximately 5,730,000 board feet per year will be harvested from the 38,000 acres classed as suitable for timber production. About 543 acres will be regenerated each year by clearcutting, 57 acres by shelterwood cutting, and 245 acres will be thinned. U

Recreation

"What outdoor recreational opportunities, experiences, and facilities should be provided on the Forests?"

Present Situation

Visitors to developed recreation sites enjoy a rustic forest environment with nature playing a dominant role in enjoyment. The Forests are also available for dispersed recreation.

Opportunities to enjoy and learn about cultural resources are provided by interpretation of significant prehistoric and historic sites. Surveys to locate sites are performed prior to land disturbing activities.

C There are 9 developed recreation sites on the Croatan used by visitors averaging 80,000 recreation visitor days per year. Approximately 250,000 recreation visitor days of dispersed recreation, including 120,000 related to hunting, fishing, and viewing wildlife, are provided annually.

U On the Uwharrie, there are 8 developed recreation sites providing for 20,000 recreation visitor days per year. About 280,000 recreation visitor days of dispersed recreation are also provided annually, of which approximately 110,000 are related to hunting, fishing, and viewing wildlife.

Plan

The Forests will be managed for a variety of recreational opportunities through the Recreation Opportunity Spectrum (ROS) which is detailed in Appendix K of the EIS. A distinct choice of recreation uses will be provided within different management areas. Developed recreation facilities will directly support dispersed recreation and include access to water-based recreation, trailheads, opportunities for cultural resource interpretation, and horse staging areas.

Opportunities to enjoy and learn about cultural resources will be enhanced by interpretation of significant prehistoric and historic sites. Surveys will be conducted prior to land disturbing activities to determine if cultural resource values are present.

On the Croatan, opportunities for semi-primitive non-motorized recreation will be provided on approximately 83,000 acres; non-motorized opportunities will also be provided on about 23,000 acres classed as Roaded Natural 2, and a mixture of motorized and non-motorized opportunities on 51,000 acres classed as Roaded Natural 1. A total of 291,000 recreation visitor days per year of dispersed use will be provided, of which 123,000 will be available for hunting, fishing, and viewing wildlife.. Developed recreation facilities will be available to provide for 98,000 recreation visitor days per year. C

On the Uwharrie, opportunities for semi-primitive non-motorized recreation will be provided on approximately 4,800 acres; non-motorized opportunities will also be provided on about 15,500 acres classed as Roaded Natural 2, and a mixture of motorized and non-motorized opportunities on 26,400 acres classed as Roaded Natural 1. A total of 336,000 recreation visitor days per year of dispersed use will be provided, including 133,000 for hunting, fishing, and viewing wildlife. Developed recreation facilities will be available to provide for 32,000 recreation visitor days per year. U

Off-Road Vehicles (ORV's)

"How should off-road vehicle use be managed on the Uwharrie National Forest?"

This issue originally pertained only to the Uwharrie National Forest. However, public comment on the Proposed Plan indicated an interest in ORV use on both Forests. The issue has been expanded to relate to both the Uwharrie and the Croatan.

Present Situation

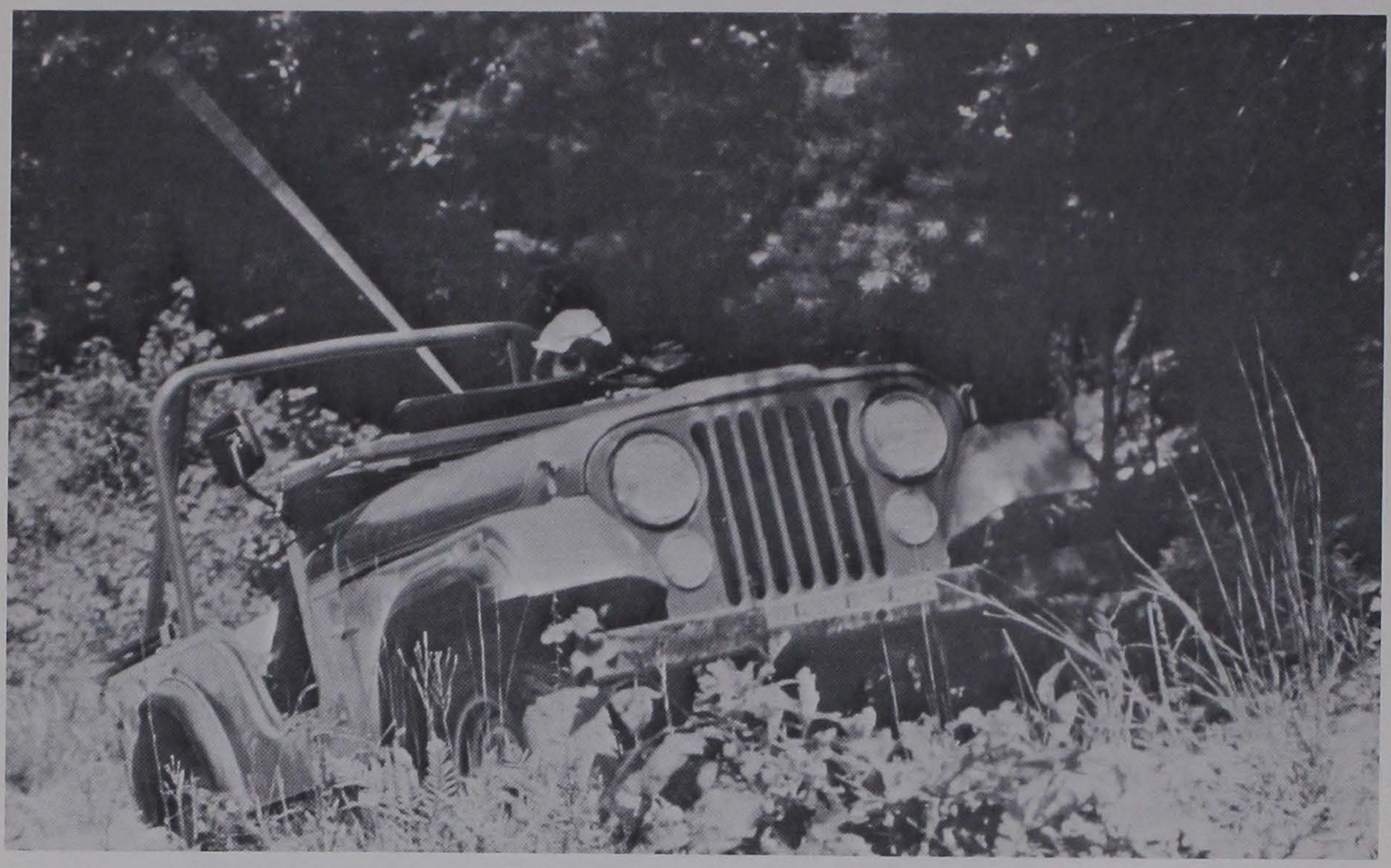
Approximately 24,000 acres on the Croatan are open to cross-country travel. Off-road vehicle travel is restricted to certain seasons or to open routes on an additional 8,000 acres. Approximately 125,000 acres are closed to cross-country travel. C

On the Uwharrie, 25,700 acres are open to cross-country travel. Off-road vehicle travel is restricted to certain seasons or to open routes on an additional 13,000 acres. This includes about 8,000 acres of the Badin Lake area in which off-road vehicle use is allowed only on approximately 15 miles of designated route. A total of 18,000 acres are closed to cross-country travel. U

Plan

To reduce environmental damage and conflicts with other Forest uses, the Forests will be closed to cross-country travel. Off-road vehicular use will occur only on designated routes.

C All roads that are open to public motorized use on the Croatan will also be open for ORV travel; in addition, approximately 10 miles of designated ORV route will be available for use.



U On the Uwharrie, approximately 25 miles of designated ORV route will be open in the Badin Lake area. All roads that are open for public motorized use will also be available for ORV travel.

Fire Management

"What level of fire management is reasonable for the protection and management of the Croatan National Forest considering adjacent land uses?"

This issue was major for the Croatan National Forest but fire management is also important on the Uwharrie. The following discussion provides information about fire management on both Forests.

Present Situation

The potential for wildfire in the Forests is a hazardous situation. One way to prevent or decrease the intensity of wildfires is through controlled burning of the leaf and needle litter on the Forest floor. Wildfire suppression through confinement, containment, or control is implemented for each wildfire that occurs.

The risk to private developments adjacent to the Forests is considered in determining how quickly and with how much equipment and personnel to respond to wildfires. Both wildfires and controlled burns are managed to maintain the air quality of surrounding areas within the standards of the Clean Air Act.

Wildfire is particularly hazardous on the Croatan National Forest. Approximately $0.61 per acre is provided annually for prevention, detection, and preparation for fighting wildfire. About 4,170 acres per year are burned with controlled fire (prescribed burning) to reduce the potential for wildfires. In addition, about 320 acres are burned to prepare sites for timber regeneration and about 980 acres are burned specifically to provide food and habitat for animals. Acres of controlled burning benefit animals and reduce the potential intensity of wildfires in addition to their stated purpose. C

On the Uwharrie, about $0.94 per acre is provided annually for prevention, detection, and preparation for fighting wildfire. Approximately 750 acres per year are burned with controlled fire (prescribed burning) to reduce the potential for wildfires. In addition, about 400 acres are burned to prepare sites for timber regeneration and about 860 acres are burned specifically to provide food and habitat for animals. U

Plan

Because prevention, detection, and preparation for fighting wildfires are so important in caring for the Forests, expenditures for these purposes will be increased. Wildfire suppression through confinement, containment, or control will continue to be implemented at the most cost efficient level.

The risk to private developments adjacent to the Forests will be considered and appropriate action taken. Both wildfires and prescribed burns will be managed to maintain the air quality of surrounding areas within the standards of the Clean Air Act.

C Approximately $1.25 per acre on the Croatan is planned for prevention, detection, and preparation for fighting wildfire. About 7,000 acres will be burned through controlled burning to reduce the fire hazard. In addition, about 330 acres will be burned each year to prepare sites for timber regeneration and 6,500 acres to provide food and habitat for animals.

U On the Uwharrie, approximately $1.28 per acre is planned for prevention, detection, and preparation for fighting wildfire. About 1,000 acres will be burned through controlled burning to reduce the fire hazard. Controlled burning is planned for 460 acres per year to prepare sites for timber regeneration. About 1,540 acres per year will be burned to provide food and habitat for wildlife.

PLAN RESPONSES TO DEMAND

The ability of the Forests to supply goods and services in response to society's demands is detailed in the Analysis of the Management Situation and summarized in Appendix C. The physical, biological, social and economic environment of the Forests provides the background for determining supply and demand potentials. This environment is discussed in Chapter III of the EIS that accompanies this Plan. Other resources, and programs of the Forests which support the ability to provide goods and services, are discussed in Appendix K of the EIS. These sources indicate that the Forests have the resource capabilities to meet demand for most goods and services.

In this Plan, the choice is made to provide Forest environments for enjoyment by the public while emphasizing protection of unique ecosystems and related wildlife habitat. As a consequence of this choice significant amounts of land will be acquired. Most newly constructed roads through the Forests will be closed to public vehicular use. The Forests will not meet estimated demand for motorized recreation, developed recreation, recreation related to wildlife and fish, or timber production.

CHAPTER III

FOREST MANAGEMENT DIRECTION

This chapter displays Forest-wide goals, objectives, and standards related to practices for achieving these objectives. The chapter also describes prescriptions, proposed practices, and standards for each management area.

FOREST GOALS AND THE DESIRED FUTURE CONDITION OF THE FORESTS

Forest goals describe a desired condition to be achieved sometime in the future. They are timeless in that they have no specific date by which they are meant to be reached. The goals for the Forests are:

•Provide a Forest environment for the public to enjoy;

•Provide goods and services that satisfy short-term public demands while improving program efficiency and long-term healthy condition of the Forest environment;

•Provide the quality of habitat for wildlife and fish that is unique to Federal lands; and

•Protect the unique natural pocosin environment of the Croatan National Forest.

These goals will promote future conditions of the Forests in which:

•The attributes of all existing special interest areas including Wilderness, research natural areas, and areas registered by the North Carolina Natural Heritage Program will be maintained;

•A high level of visual quality and a wide variety of recreational opportunities will be provided;

•Plant and animal diversity will be maintained, viable populations of all native plants and animals will be maintained or increased, and suitable habitat for animals depending on old growth forests will be increased;

•Threatened, endangered, and sensitive plant and animal species, including the red-cockaded woodpecker, will be protected and population recovery goals reached to the extent practicable;

•Special habitats, including savannas and longleaf pine/scrub oak communities, will retain their distinct characteristics;

•Water quality and soil productivity will be maintained;

•Riparian areas, floodplains, wetlands, and existing ecosystems will be perpetuated;

•A continuous supply of wood products will be provided;

•Cultural resource sites will be protected, significant sites nominated to the National Register of Historic Places, and public interpretation will be provided for appropriate sites; and

•The amount of National Forest System land will be increased through purchase, donation, and exchange of key tracts.

FOREST MANAGEMENT OBJECTIVES

Forest management objectives are the specific desired outputs of goods and services that are expected as the Plan is implemented. Objectives are stated below as annual averages for the life of the Plan, 1986-2000. Additional information on quantities of goods and services expected to be produced is available in Appendix E.

No threatened or endangered plant or animal will be adversely affected by implementation of the Plan. All threatened, endangered, and sensitive plants and animals will be protected and population levels recovered to the extent practicable.

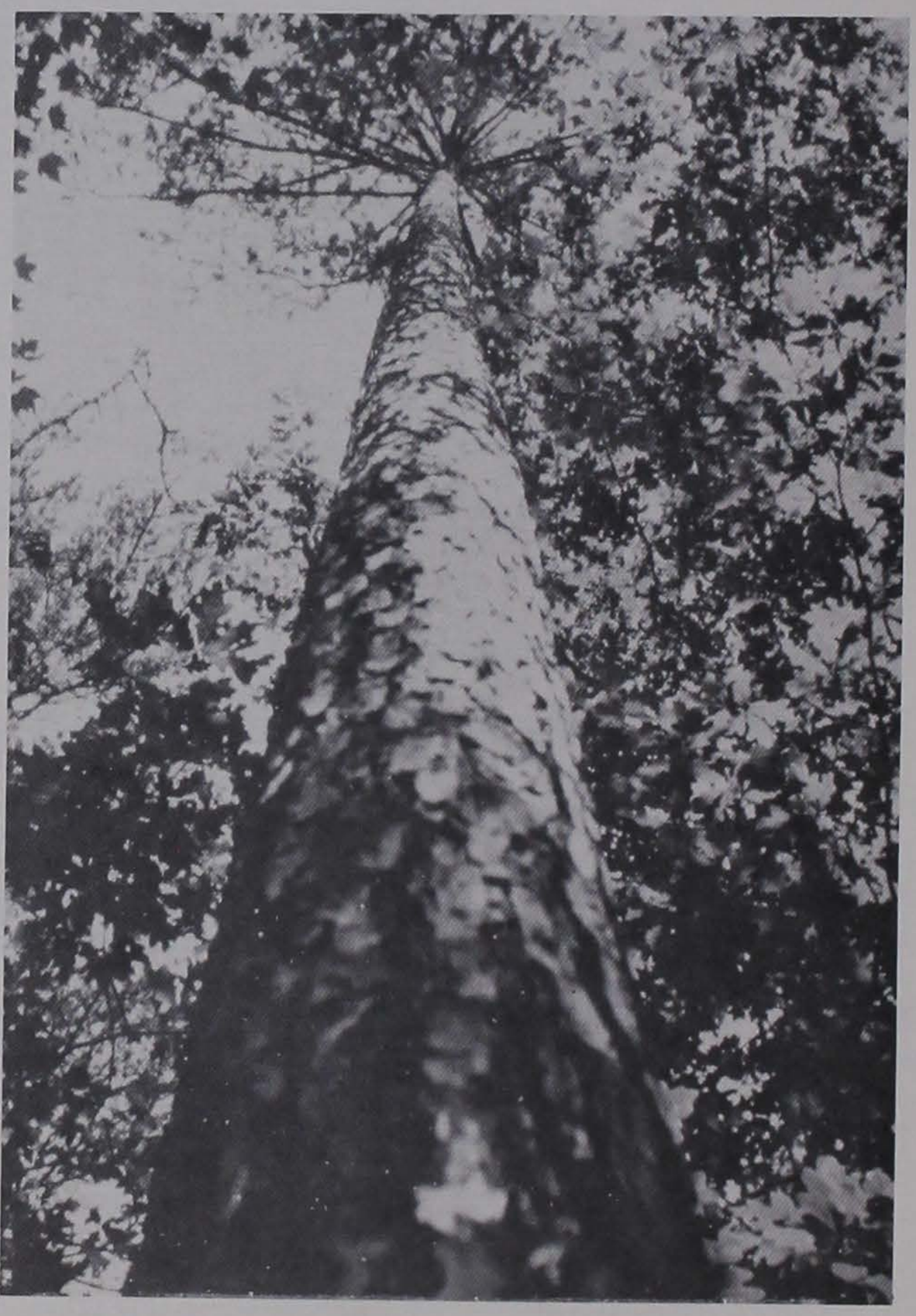
Special plant communities will be protected or enhanced and the unique habitat available on Federal lands will be provided for all native animals. Healthy, vigorous trees will be grown on both Forests.

For the Croatan National Forest, goods and services expected to be produced include protecting 30,000 acres of Wilderness, 9 special interest areas identified by the North Carolina Natural Heritage Program, and all known and newly discovered significant historical and archaeological sites. In addition, 9 developed recreation areas will be managed to provide enjoyment for an annual average of 98,000 Recreation Visitor Days (RVD's) of developed recreation use. Opportunities will be available for 168,000 RVD's of dispersed nonwildlife recreation use of which 3,000 are in semi-primitive non-motorized areas of the Forest. There will also be approximately 74,000 Wildlife and Fish User Days (WFUD's) for hunting and viewing wildlife, 28,000 WFUD's for fishing, and 21,000 WFUD's for waterfowl-related use.

C

Insect-eating plants and the pocosin will be protected or enhanced. Approximately 3,490,000 board feet of timber will be produced each year from the 30,300 acres suitable for timber production. Timber harvesting will take place by clearcutting approximately 330 acres, shelterwood cutting 35 acres, and thinning 315 acres.

Wildlife habitat improvement through controlled use of fire and maintenance of forest openings will occur on approximately 6,630 acres per year. Prescribed burning to reduce the build-up of leaf and needle litter, thereby reducing the occurrence and severity of wildfires, will average 7,000 acres annually.



On the Uwharrie National Forest, 4,790 acres of Wilderness will be protected, 7 special interest areas identified by the North Carolina Natural Heritage Program will be maintained, and all known and newly discovered historical and archaeological sites will be evaluated and significant sites protected.

In addition, 8 developed recreation sites will be managed to provide enjoyment for visitors at an annual average of 32,000 RVD's of developed recreation use. Dispersed nonwildlife recreation use will average 203,000 RVD's, of which 10,000 are in semi-primitive non-motorized areas of the Forest. There will also be approximately 116,000 WFUD's available for hunting and viewing wildlife and 17,000 WFUD's for fishing.

Approximately 5,730,000 board feet of timber will be produced each year from the 38,000 acres suitable for timber production. Timber harvesting will take place by clearcutting approximately 543 acres, shelterwood cutting 57 acres, and thinning 245 acres.

Wildlife habitat improvement through controlled use of fire and maintenance of forest openings will occur on approximately 1,570 acres per year, and prescribed burning to reduce the potential for wildfire will average 1,000 acres annually.

FOREST-WIDE STANDARDS

In addition to the management direction found in the Forest Service Directives System, Forest-wide standards have been established for the Forests. These standards are the bounds within which all practices will be carried out to implement the Plan. Table III-1 lists these standards and the practices to which they apply. This table is organized by resource to facilitate finding particular practices and standards. The practices will be applied in integrated multi-resource prescriptions to achieve the goals of the Plan.

Table III-1. Forest-Wide Standards.

RESOURCE

Recreation

Dispersed Recreation:

General Direction:

•Provide the opportunity for visitors to experience a variety of recreation activities with minimum regulation; manage use through information rather than regulation where possible.

•Implement the "no trace" use concept with emphasis on wilderness, concentrated areas of ORV use, trailheads and National Recreation Trails.

•Provide access for water-oriented activities such as canoeing, power boating, fishing, and waterfowl hunting.

Standards:

•Allow primitive camping anywhere except in wildlife openings or specific areas posted closed to camping.

•Allow recreational panning for gold, where minerals are in federal ownership, using nonmechanized equipment with no ground disturbance.

•Allow hang gliding from naturally occurring launch sites where not obstructed by vegetation.

Off-Road Vehicles (ORV's):

General Direction:

•Provide ORV opportunities on designated routes to promote user enjoyment and safety, providing easy to moderate levels of challenge, where ORV use is compatible with other Forest uses and does not cause unacceptable adverse impacts; provide no cross-country travel opportunities.

Standards:

•Develop all ORV travel routes into managed "loop" or "spiderweb" systems. Provide parking access at key locations.

•Design and construct travel surfaces to avoid erosion from ORV use; deny use only if unacceptable adverse impacts cannot be avoided.

•Identify routes for ORV use and inform riders of safety precautions, ways to minimize use-impacts and potential conflicts with other users.

•Provide ORV opportunities on open system roads at least seasonally for vehicles that are appropriately licensed.

Table III-1. Forest-Wide Standards. (continued)

RESOURCE

Recreation (cont.)

Trails:

General Direction:

•Design the trail system to complement Forest and management area objectives, accommodate the intended type and level of use and require minimal maintenance.

•Provide a variety of trail uses.

•Provide a combination of uses on an individual trail if it is safe, the condition of the trail is suitable, and user conflicts are minimal.

•Manage trail corridors and NFS lands adjacent to all trails, including National Scenic, Historic and Recreation Trails, according to the standards of the management area in which they are located.

•Sign or mark trails to assist public use.

•Provide appropriate maps, brochures, handouts, and posters to facilitate public use of the trail system.

Standards:

•Manage trails for hiking unless designated and signed for other uses.

•Redesign existing trails into loop systems with the exception of existing long-distance trails such as the Uwharrie and Neusiok Trails. Reconstruct, relocate or construct connectors to the existing trail system before building new trails.

•Evaluate the need for additional long distance trails through the environmental analysis process.

•Design, build, and maintain trails for their intended use and desired experience level (experience and maintenance levels of trails are described in detail in Appendix G).

•Use barrier-free design when constructing or reconstructing all but primitive and semi-primitive trails.

Rivers:

General Direction:

•Provide access for the public use of rivers that are suitable for boating and have at least 10% of their shoreline on NFS lands.

•Determine the candidate status of the White Oak River as a Wild and Scenic River. Manage a corridor 1/4 mile from the river to avoid or mitigate any action that might adversely affect the river's potential for such designation while it is being evaluated. C

Table III-1. Forest-Wide Standards. (continued)

RESOURCE

Recreation (cont.)

Cultural Resources:

General Direction:

•Protect all cultural or historic sites by maintaining appropriate confidentiality of locations.

•Issue antiquities permits for study and research to qualified academic institutions, organizations, or individuals.

•Maintain the quality of cultural resource sites to retain their eligibility for the National Register of Historic Places.

•Ensure that all land use permits, contracts, and other documents contain adequate stipulations and clauses for inventory and protection of significant cultural resources.

•Interpret and develop suitable cultural resource sites for public recreational use; emphasize developments that have low maintenance cost.

Standard:

•Identify and nominate significant cultural resources to the National Register of Historic Places. Locate, evaluate and prescribe necessary mitigation measures before doing anything that could disturb a significant cultural resource. Consult with Native Americans, State Historic Preservation Officer, and other State and Federal agencies as appropriate.

Commercial Use:

General Direction:

•Require a paid permit for commercial use that is deemed appropriate; limit the number of commercial permits as needed to accomplish Forest objectives.

•Provide free permits for noncommercial organized group events that are deemed appropriate.

•Issue no permits for new recreation residences; those presently authorized will remain during this plan period.

Visual:

General Direction:

•Design Forest management activities to meet Visual Quality Objectives as shown in respective Management Area standards (Visual Quality Objectives are described in Appendix K of the EIS accompanying this Plan).

Table III-1. Forest-Wide Standards. (continued)

RESOURCE

Recreation (cont.)

Visual: (cont.)

Standards:

Use the following standards in areas that can be seen from trails, roads open for public vehicular use, recreation areas, lakes or rivers:

PRACTICE	VISUAL QUALITY OBJECTIVE (VQO)		
	Retention	Partial Retention	Modification
Clearcut	1-4,6,8,11,12,17,18,19	1-4,7,9,11,13	1,4,10,11
Shelterwood	1-4,6,8,11,12,17,18,19	1-4,7,9,11,13	1,3,4,10,11
Salvage Cut	8,11,12,18,19	9,11,13,18	10,11
Commercial Thin	5,8,12,18	5,9,13,18	10,11
Precommercial Thin	9,11,18	10,11,13	10,11
Shear Site Preparation	8	9	10
Chainsaw Site Preparation	9,11	9,11	10
Prescribed Burn	15,20	15	16
Special Uses	14,19		
Access Roads	17		

Use Standards 1 and 16 for practices in all other areas including areas in the Maximum Modification Visual Quality Objective.

1. Establish irregular stand shape and avoid straight lines or geometric forms except as necessary along landlines.
2. Feather the edge of cut by retaining mid- and understory trees in a 25- to 100-foot zone.
3. Leave flowering and ornamental vegetation where practical to enhance vegetative variety.
4. Keep openings along road as narrow as possible (100 ft. maximum in Retention and 250 ft. maximum in Partial Retention on both Forests, and 500 ft. maximum in Modification on the Uwharrie).
5. Vary densities of thinnings.
6. Allow no opening exceeding 10 acres to be viewed in the foreground on the Uwharrie. U
7. Allow no opening exceeding 15 acres to be viewed in the foreground on the Uwharrie. U
8. Remove slash for 150 feet from the edge of a road or trail, except brush barriers for erosion control. Remove slash from the site or hand pile and burn outside of this 150-foot zone. Lop and scatter slash to within 2 feet of the ground in the rest of the area or pile and burn. Do not use windrowing in seen areas.
9. Lop and scatter slash to within 2 feet of the ground for 100 feet beyond edge of road or trail, or pile and burn slash outside of 100-foot zone.
10. On the Uwharrie, lop and scatter slash to within 2 feet of the ground for 50 feet beyond edge of road or trail, or pile and burn slash outside of 50-foot zone. U

RESOURCE

Recreation (cont.)

Visual: (cont.)

Standards: (cont.)

11. Direct cut trees away from roads or lakes within the lop and scatter zone.
12. Screen log landings from view and restore as close to original contour as practical.
13. Screen log landings from view.
14. Exclude from view, where practical, all special uses, borrow pits, transmission lines, mining, or oil and gas developments.
15. Use prescribed fire only in late winter except for site preparation and fuelbreaks.
16. Use prescribed fire at any suitable time of year.
17. Build roads a minimum of 1/4 mile apart, intersect existing roads at right angles if practical, curve alignment to prevent continuous view of new road.
18. Apply marking paint so it is not visible from the travelway.
19. Secure landscape architecture expertise during environmental analysis.

North Carolina Natural Heritage Areas of Special Interest:

General Direction:

•Maintain or improve special interest areas. Participate with the North Carolina Natural Heritage Program in registration of special interest areas. Consult with the State Natural Heritage Program Director prior to any significant management action within areas of special interest. (Areas are described along with management direction in the last section of this chapter.)

Interpretive Services:

General Direction:

•Provide interpretive programs for the enjoyment of Forest visitors.

•Rehabilitate present facilities before initiating new developments.

Wildlife and Fish

General Direction:

•Develop and include wildlife and fish habitat protection or enhancement measures as appropriate within timber sale areas in Sale Area Improvement (SAI) plans.

•Initiate animal damage control measures when animal populations threaten public health or safety, cause unacceptable damage to wildlife, other resources, or property.

C •Manage the red-cockaded woodpecker on the Croatan in accordance with Region 8 Standards; colonies are classified as unsuitable for timber production and the red-cockaded woodpecker is featured in all colony stands. Manage suitable red-cockaded woodpecker habitat on the Croatan on 100-year rotations for longleaf pine and 80-year rotations for other yellow pines.

Table III-1. Forest-Wide Standards. (continued)

RESOURCE

Wildlife and Fish (cont.)

General Direction: (cont.)

•Mow roadside banks after flowering and seed development where threatened, endangered, or sensitive plant species occur. Mow banks selectively to enhance seed development.

•Retain clumps of mast producing hardwoods in areas used for fuelwood (firewood) gathering by the public.

•Provide lake and stream structural habitat improvements (stream deflectors, log structures, stream cover, lake fish attractors), bank fishing, and public access for fish habitat management in coordination with the North Carolina Wildlife Resources Commission.

•Follow specific management and protection activities (shown in Appendix A) for threatened, endangered, and sensitive species.

Standards:

•Retain at least 5% of Management Areas 1, 2, 2L, 3, and 4 in well-dispersed groups of old growth (biologically mature trees) in all forest types for the life span of the species.

•Prescribe burn red-cockaded woodpecker suitable habitat including colonies at least once every five years. Ensure that hardwood encroachment does not adversely affect colony sites.

•Manage featured species habitat as described in the Wildlife Habitat Management Handbook, as amended by these standards.

•Retain or develop at least 30 square feet of basal area per acre of hardwood mast producing species throughout the rotation in stands where a significant mast producing hardwood component occurs naturally in a pine management type. Manage the entire stand at regeneration including the hardwood component, except for key areas, stringers, or other appropriate inclusions.

•Retain at least one snag per 2 acres, where they occur, in all regeneration areas. Select snags at least 12" diameter at breast height (dbh) with two or more sound branches.

•Retain a 1/2 acre clump of suitable deciduous trees for every 20 acres of regeneration to provide a source of dens. Retain individual den trees or potential den trees where clumps of such trees do not occur. Favor trees 22" to 36" dbh whenever possible.

•Retain scrub oak (turkey, blackjack, and bluejack oak) in either pure stands or mixed with longleaf pine except where incompatible with management for threatened and endangered animals; retain 1/2 acre clump of scrub oak (1/2 acre clump per 20 acres) in loblolly stands where scrub oaks occur. Manage to assure that the scrub oak component is maintained.

•Favor longleaf over loblolly pine as the management type where it presently exists as at least 30% or more of the dominant stem density where the site is suitable.

Table III-1. Forest-Wide Standards. (continued)

RESOURCE

Wildlife and Fish (cont.)

Standards: (cont.)

•Develop or maintain at least 0.5% of Management Areas 1 through 5 in permanent grass and forb openings.

•Where bear are featured, provide less than one mile of open road per 2,500 acres. Where turkey are featured, provide less than one mile of road per 1,280 acres, and an average regeneration area size of 25 acres.

Timber

General Direction:

•Use moderate intensity of managment for the softwood species.

•Through even-aged silvicultural systems, manage lands suitable for timber production for high quality pine and hardwood sawtimber-size trees with the following diameter objectives: longleaf, loblolly, and shortleaf pine - 18" to 24"; hardwood - 16" to 20"; and other species - 14" to 18".

•Use genetically improved seed or seedlings, if available, when planting softwoods.

•Modify harvest methods to achieve visual quality objectives or to manage riparian zones. Uneven-aged silvicultural systems may be used to accomplish these objectives.

•Use only the following tree cutting practices on land that is classed as unsuitable for timber production (only the first practice may be used in Management Area 8, Wilderness); consider timber from these practices as nonchargeable to the allowable sale quantity volume:

-Salvage or sanitation harvesting of trees or stands that are substantially damaged by fire, windthrow, or other catastrophe, or which are in imminent danger from insect or disease attack;
-Cutting of individual trees or stands to test logging systems, to conduct studies, or for the purpose of gathering information about tree growth, insect or disease organisms, or determining the effect of such harvesting on other resources;
-Cutting of trees to provide for safety of Forest users, such as hazard-tree removal along roads open to the public and along powerlines;
-Cutting of trees to meet habitat objectives for threatened or endangered animals or plants, or to maintain or improve habitat for other wildlife or fish indicator species;
-Cutting of bottomland or upland hardwoods to meet wildlife habitat objectives on the Croatan;
-Cutting of trees to improve visual quality by opening scenic vistas or by improving visual variety;
-Cutting of trees for fuelwood (firewood); and
-Cutting of trees within clearing limits for road and public utility construction.

RESOURCE

Timber (cont.)

General Direction: (cont.)

•Use pesticides after a decision has been made on the basis of a site specific environmental analysis using NEPA procedures.

•Use integrated pest management practices to reduce timber damage from insects and diseases. Use pesticides only in accordance with existing Forest Service, Federal, and State laws and policies.

•Consult Region 8, Forest Pest Management, when problems occur with insects or diseases. Use pesticides when required for control of pests.

•Evaluate all areas identified as potential Research Natural Areas in conjunction with Southeastern Forest Experiment Station personnel.

•Fertilize phosphorus deficient soils growing yellow pines on lands classed as suitable for timber production.

Standards:

•Use the "Southern Region Restocking Standards" in the Regional Guide for the South:

NUMBER OF STEMS PER ACRE

FOREST TYPE	LOWER LEVEL	TARGET LEVEL	UPPER LEVEL
Loblolly Pine	300	500-700	900
Longleaf Pine	600	700-900	1200
Shortleaf Pine	300	500-700	900
Virginia Pine	300	500-700	900
Hardwoods	150	250-350	500

•Use the following minimum rotations (a younger harvest age may be used if needed to diversify stands 150 acres and larger to more evenly distribute age classes of trees or to promote uneven-aged management in visually sensitive areas):

Management Type	Uwharrie	Croatan
Loblolly Pine	60 years	80 years
Longleaf Pine	70 years	100 years
Shortleaf Pine	70 years	80 years[1/]
Hardwood & other	80 years	80 years

•Manage approximately 5,000 acres on the Croatan in the Longleaf Management Type. Allow pinestraw harvest in longleaf areas after appropriate site specific environmental analysis.

C

[1/] Hardwoods on the Croatan are classified as unsuitable for timber production.

Table III-1. Forest-Wide Standards. (continued)

RESOURCE

Timber (cont.)

Standards: (cont.)

U •Manage approximately 700 acres on the Uwharrie in the Longleaf Management Type.

•Maintain a minimum of 10 chains (660 feet) between regeneration cuts (openings) except when a site specific analysis requires a lesser distance or when using uneven-aged management. Classify an even-aged regeneration area as an opening until the reestablished stand has reached a height that is approximately 20% of the height of the tallest adjacent stand. Base the stand height on the average of the dominant and codominant trees in the reestablished and tallest adjacent stands. Determine the height relationship during silvicultural examinations.

•Vary sizes of regeneration areas depending on the intensity of management in each management area.

•Use the following maximum size of regeneration cuts except for harvests resulting from catastrophic conditions such as fire, insect or disease attacks or windstorms:

Management Type	Maximum Size (Acres)
-- Yellow Pine	80
-- All Other	40

•Use approved practices to minimize the possibility of spills if pesticides are used.

Fire

General Direction:

•Use prescribed burning (controlled fire) to reduce the materials on the ground that increase the likelihood and potential intensity of wildfires.

•Consider the impacts of wildfire smoke on sensitive areas in choosing the appropriate suppression response. Manage smoke from prescribed burns in accordance with the North Carolina Smoke Management Guidelines and the Southern Forestry Smoke Management Guidebook.

•Use the most cost-efficient funding levels for fire prevention, detection, and preparation as determined through the National Fire Management Analysis System.

Standards:

•Use the following criteria to help determine the suppression response for wildfire: threat to life and property; damage to air, water and soil productivity; and potential for escape to private lands. Control the wildfire if it is a serious threat to any of these things; otherwise, confine or contain the fire.

•Take advantage of unplanned ignitions to achieve prescribed burning objectives except in developed recreation areas and administrative areas.

Table III-1. Forest-Wide Standards. (continued)

RESOURCE

Soil and Water

General Direction:

•Meet the water resource objectives for watersheds described in Appendix B.

•Maintain soil productivity and improve it where necessary.

•Include soil and water improvement measures in SAI Plans where opportunities exist.

•Close, lime, fertilize and seed temporary developments as needed to control erosion. Use seed mixtures favorable to wildlife if they will provide adequate erosion control.

•Expose the minimum amount of soil practicable at any given time from all soil-disturbing activities. Seed all disturbed soil to appropriate vegetation before the end of the normal seeding season.

•Maintain drainage on skid trails and temporary roads at all times; maintain all drainage structures in functioning condition.

Standards:

•Maintain stream channels in a free-flowing condition. Cross channels at right angles where possible. Use either permanent culverts or temporary bridges for all temporary road stream crossings. Do not use brush-, log-, or dirt-filled crossings.

•Skid timber in areas other than perennial, intermittent or ephemeral stream channels.

•Seed all bare soil of temporary developments, such as temporary roads and landings for timber harvest and mineral exploration, with appropriate annuals at the time of construction; this includes all temporary roadbeds, shoulders, fills, cuts, and other bare areas.

•Avoid outletting broad-based dips directly into stream channels, skid trails, gullies, or other unstable areas such as fill slopes.

•Close logging roads when wet weather rutting would reduce the functioning of the road dips or other drainage features.

•Rework roadbeds whenever rutting becomes deep enough to prevent proper functioning of the broad-based dips or other drainage features. Avoid destroying established vegetation on road shoulders and road banks.

•On the Uwharrie, establish a 70% ground cover of permanent vegetation by the end of the first growing season following the end of use on temporary roads, skid trails and log landings. Rip compacted areas at least 8" deep except where the soil contains as much or more stone than the stoney phase mapping unit. U

Table III-1. Forest-Wide Standards. (continued)

RESOURCE

Soil and Water (cont.)

Standards: (cont.)

C •On the Croatan, establish a 70% ground cover of permanent vegetation by the end of the first growing season following the end of use on temporary roads, skid trails and log landings except where low soil productivity or poor moisture conditions preclude establishing a 70% cover.

Riparian Area

•Maintain a 33-foot wide protective strip, with overstory, along each side of all perennial streams.

U •Maintain a 33-foot wide protective strip, which may consist entirely of understory vegetation, along each side of all intermittent streams on the Uwharrie.

C •Maintain a 33-foot wide protective strip, with no mechanical site preparation by bedding, along intermittent stream channels on the Croatan.

•Establish protective strips adjacent to all perennial and intermittent streams and lakes wherever there is any construction or soil disturbing activity, such as roads, skid trails, log landings or mechanical site preparation. Determine the width of the strip from a stream or lake based on land slope and soil erodibility; measure the width in slope distance from the edge as follows:

Land Slope	Soil Erosion Hazard (Zone Width in Feet)	
	Low[2/] (K≤.32)	High (K>.32)
0%	65	85
10%	100	125
20%	125	155
30%	155	215
40%	195	260
50%	235	315
60%+	275	375

•Use the following in the protective strip only when site-specific analysis indicates their acceptability:

--Wheeled or tracked vehicles, including ORV's, except on designated travelways and stream crossings;
--Recreation facility construction; and
--Mechanical site preparation.

•Use only prescribed fire that does not kill the overstory or expose mineral soil except in fire lines; do not consume the duff and humus layers.

2/ "K" is a soil erodibility factor used in the Universal Soil Loss Equation.

Table III-1. Forest-Wide Standards. (continued)

RESOURCE

Soil and Water (cont.)

Standards: (cont.)

•Manage wetlands on the Uwharrie, including upland bogs for the enhancement of riparian-dependent resources; these lands are classified as unsuitable for timber production. U

•On the Uwharrie, install water-bars on all tractor fire lines during fire rehabilitation.

•Keep logging slash out of all perennial stream channels.

Facilities/Roads

General Direction:

•Manage the following within Forest Service requirements and applicable Federal, State, and local codes:

electric transmission facilities;
water storage and transmission facilities;
solid waste systems;
waste water collection and treatment facilities;
potable water supplies; and
buildings.

Standards:

•Maintain closed roads on the Croatan at maintenance level 2 and open roads at maintenance level 3 or above (defined in Appendix J of the EIS). C

•Maintain closed roads on the Uwharrie at maintenance level 1 and open roads at maintenance level 2 or above (defined in Appendix J of the EIS). U

Minerals

General Direction:

•Utilize mineral resources consistent with the standards in the Regional Guide for the South and the objectives of this Plan.

•Use the environmental analysis process to evaluate environmental effects and the need for special stipulations on all applications for permits, leases, and licenses.

•Permit no peat mining.

Standard:

•Process lease applications within Regional Guidelines; complete the appropriate environmental analysis within 12 weeks of receipt of application unless unusual situations arise.

Table III-1. Forest-Wide Standards. (continued)

RESOURCE

Lands

General Direction:

•Use the following characteristics (in order of priority) in evaluating lands for acquisition:

Protection for wilderness;
Wildlife and fish management opportunities;
Access opportunities;
Consolidation for efficiency; and
Opportunities for water-based recreation.

•Exchange NFS lands, when appropriate, to permit orderly growth of local municipalities.

•Acquire rights-of-way to provide access to NFS lands.

•Authorize special use permits when there is a demonstrated need, the use is in the public interest and the use cannot be accommodated on private land. Process applications for permits in the order in which they are received.

•Convert all right-of-way permits issued to the North Carolina Department of Transportation to U.S. Department of Agriculture or U.S. Department of Transportation Easements.

•Provide transportation and utility corridors on NFS land when there is a demonstrated public need that cannot be accommodated on private land. Where possible, use existing corridors before new corridors are established.

•Change public and private landownership to improve the quality, location, and mix of public recreational opportunities and experiences.

•Add special stipulations to permits, leases, and contracts to adequately protect areas of special interest registered with the North Carolina Natural Heritage Program.

Standard:

•Maintain all surveyed property boundary lines every 10 years on the Uwharrie and every 8 years on the Croatan.

SUMMARY OF MANAGEMENT PRESCRIPTIONS

Prescriptions are sets of practices the Forest Service will use to manage the multiple resources of the Forests for the 15-year life of the Plan. Forest-wide practices, and the standards for carrying out these practices, are described in Table III-1. Management area standards, and the practices to which they apply, are described in the following section. Proposed and probable practices for management areas, including the timber sale schedule, are displayed in Appendix E.

MANAGEMENT AREAS

The Forests will be administered through 11 management areas, each of which has unique goals and appropriate management practices and standards to achieve these goals. The management areas represent different physical and biological characteristics, as well as administrative conditions such as types of public access. The distribution of management areas provides a variety of enjoyable public uses and a balance of goods and services from each of the Forests. Management Areas are numbered, described, and their acreages displayed for each Forest as follows:

Number	Description	Acreage		
		Croatan	Uwharrie	Total
1	Commercial timber and car-touring areas. Stands thinned and harvested at 40- to 80-years for high-quality sawtimber. Most roads open to public. Animals needing young stands favored. Off-road vehicles permitted on designated routes.	23,430	10,780	34,210
2	Old timber and car-touring areas. Timber harvested for wood and wildlife habitat. Many old trees left. Animals needing old stands favored. Off-road vehicles permitted on designated routes.	5,805	0	5,805
2 L	Old timber and car-touring area of longleaf pine on the Croatan. Timber harvested for wood and wildlife habitat. Red-cockaded woodpecker favored. Off-road vehicles permitted on designated routes.	21,760	0	21,760
3	Commercial timber and hiking. Stands thinned and harvested at 40- to 80-years for high-quality sawtimber. Many roads closed to public. Animals needing young stands favored. No off-road vehicles. Visitor use mainly on foot or horseback.	7,065	15,210	22,275
4	Old timber and hiking. Trees harvested for wood and wildlife habitat. Old trees often left. Few roads, and all closed to motorized use. Animals needing old stands favored. Visitor entry mainly on foot or horseback.	8,055	15,335	23,390

Number	Description	Acreage		
		Croatan	Uwharrie	Total
5	Modified natural areas. Trees not cut for timber production. Openings created for wildlife. Most roads closed. Little human disturbance of animals. Visitor entry on foot or horseback.	54,160	0	54,160
6	Administrative facility areas. Places for offices, work centers, and special uses such as utility corridors.	545	10	555
7	Developed recreation, research, and cultural resource areas.	235	575	810
8	Officially designated "Wilderness Areas". Birkhead Mountains on the Uwharrie; Sheep Ridge, Pond Pine, Pocosin, and Catfish Lake South on the Croatan.	30,000	4,790	34,790
9	Waterfowl impoundments. Catfish Lake Waterfowl Impoundment on the Croatan.	870	0	870
10	Recreation lakes. Catfish, Great, and Long Lakes on the Croatan.	5,075	0	5,075

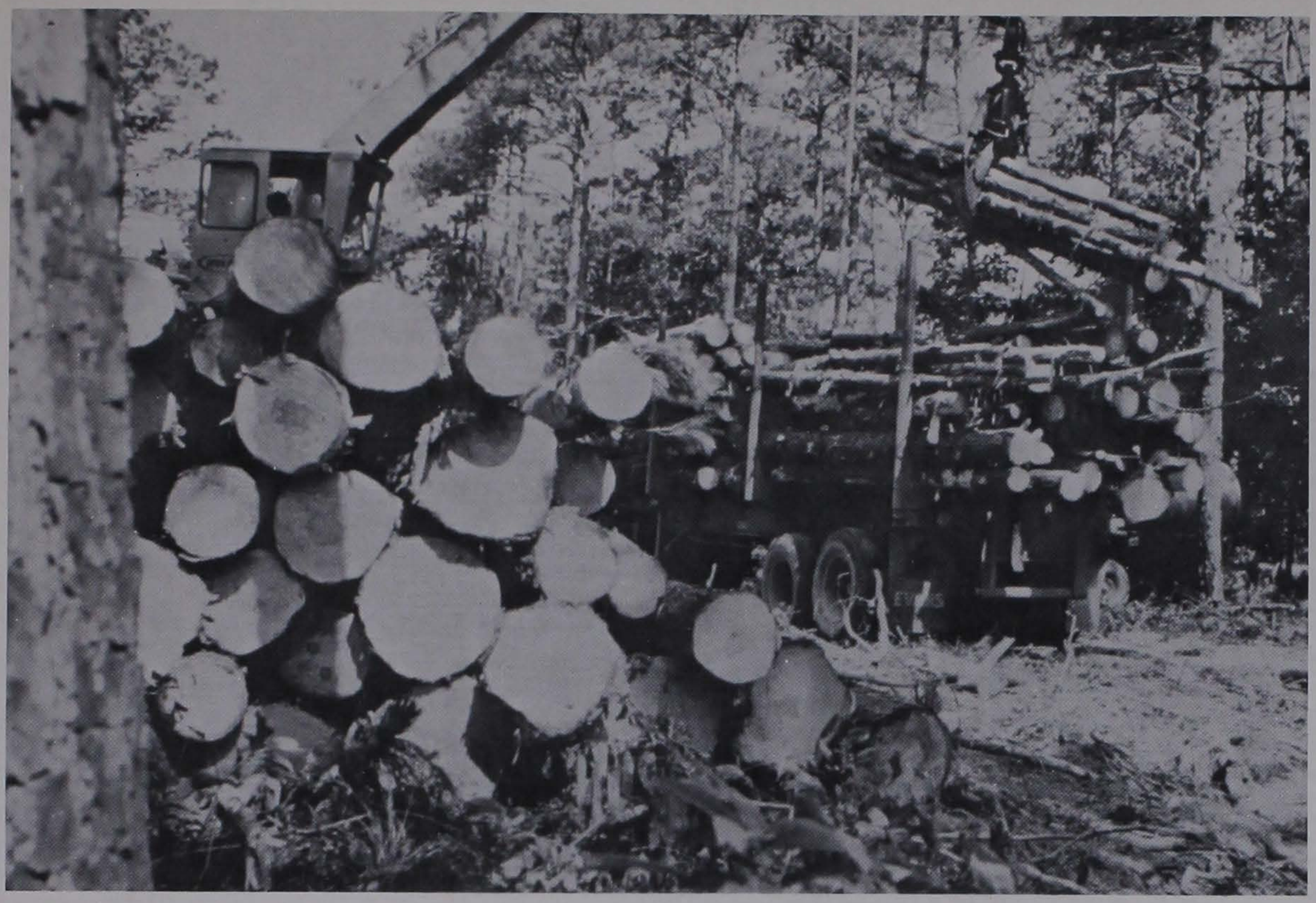
Management Areas 5 through 10 have no acreage classified as suitable for timber production; acres classed as suitable for timber production in Management Areas 1 through 4 are displayed in Tables E-1 through E-4 of Appendix E. Management Areas, and specific standards for their management, are described below.

Management Area 1

This area provides a continuous supply of commercial timber and opportunities for visitors to enjoy driving through the Forest.

Forest visitors may see evidence of timber harvesting and road building from the unpaved roads through the Forest, most of which are open to public use. Trees are a variety of ages and species. Animals that depend for food on plants associated with young trees, such as deer, quail, many small mammals, and birds that prey on these mammals, are numerous. People can be seen enjoying the Forest, including using off-road vehicles on designated roads and trails.

Some trees will be cut when they are 40- to 80-years of age, depending on their species and condition. Trees will also be thinned periodically to promote growth of the remaining trees. These timber practices will favor animals that depend on plants associated with young trees. Groups of mature trees left in harvested areas, and the majority of the area growing a healthy forest, provide food and cover for many other animals. New roads will be built primarily for timber harvesting; most existing roads and some new roads will be kept open for hunters and visitors who drive through the Forest. Opportunities are provided for many dispersed recreation activities such as hiking, backpacking, and nature study.



Recreation

Dispersed Recreation

Standards:

Provide opportunities for Roaded Natural 1 Experience (ROS experience levels, including Roaded Natural 1, are described in Appendix K of the EIS).

Provide for ORV opportunities on routes averaging between 1-3 miles per 1,000 acres; ORV opportunities will not exceed 5 miles per 1,000 acres.

Maintain trails at maintenance level 3, 4, or 5 as described in Appendix G.

Visual

Standard:

Meet the Partial Retention Visual Quality Objective in the foreground of Sensitivity Level 1 areas; meet the Modification VQO in Sensitivity Level 2 areas and other Sensitivity Level 1 areas; and meet the Maximum Modification VQO in Sensitivity Level 3 areas (Sensitivity Levels and VQO's are described in Appendix K of the EIS).

Wildlife and Fish

General Direction:

Feature deer; featured species are displayed by compartment in Appendix A.

Provide habitat for wildlife preferring young stages of plant growth through regularly occurring timber management activities and direct habitat improvements.

Timber

General Direction:

Manage according to rotations displayed in the Forest-wide standards. Schedule thinnings to maintain growth for sawtimber production appropriate for species and site capability.

Standards:

Achieve the desired stand density through appropriate planting densities. Use Southern Region restocking standards shown in the Forest-wide standards.

Prepare pine regeneration sites by a combination of prescribed burning, chemicals, mechanical equipment and/or handtools. In hardwoods, prepare sites by cutting all live stems 1" and greater in diameter; plant hardwoods where appropriate to establish stands or change species composition. Use chemicals, mechanical equipment or prescribed burning for species control as necessary.

Use the following harvest methods in pine types:

a. Clearcut with planting of improved seedlings (all pine types) when available;
b. Shelterwood regeneration of longleaf pine where stand conditions indicate that this is a suitable method of regeneration;
c. Shelterwood in visually sensitive areas (all pine types); and
d. Seedtree.

U

Use the following harvest methods in hardwood types on the Uwharrie:

a. Clearcut with natural regeneration from advanced reproduction and low sprouts of desirable species or artificial regeneration to improve stand composition; and
b. Shelterwood in visually sensitive areas.

Use an average size of regeneration areas for hardwood of approximately 30 acres.

Roads

General Direction:

Develop roads to accommodate a safe combination of logging tractor-trailers and recreation traffic.

Design open roads for all-weather use.

Roads (continued)

Standards:

Manage arterial and collector roads as open. Manage local roads as open except when closure is necessary to enhance wildlife species or meet other management needs; close less than 10% of local roads on a year-long basis.

Consider public traffic as one of the main factors in road standards; emphasize sight distance on roads through the planning and design stages. Construct turnouts on open, single-laned roads at a maximum interval of 1,000 feet.

Develop an average road density of 3 miles per 1,000 acres.

Management Area 2

This area provides opportunities for visitors to enjoy driving through the Forest on unpaved roads to see nature, hunt, or fish. The area is also managed to provide commercial timber.

Forest visitors can see some evidence of timber harvesting and road building from Forest Service roads, most of which are open for driving. Trees are a variety of types; older trees are most common. Animals that depend on middle to older stages of vegetation, such as red-cockaded woodpecker, raccoon, and some nongame animals, are favored. People can be seen enjoying the Forest, including using off-road vehicles on designated roads and trails.

Trees are harvested to produce wood and to enhance plant and animal diversity. Many older trees are left standing. Food and cover are provided for animals that depend on older trees in the majority of the Forest growing to maturity. The small part of the area that is newly cut provides food for other animals. Most existing roads, and some of the few roads that are built, are open for people driving through the Forests. Opportunities are provided for many dispersed recreation activities such as hiking, backpacking, and nature study.

Management Area 2 - Standards

Recreation

Dispersed Recreation

Standards:

Provide opportunities for Roaded Natural 1 Experiences in areas accessible by State and Forest Service roads. Provide opportunities for Roaded Natural 2 Experiences in other areas.

Provide for ORV opportunities at route densities from 0.25 mile to 2.0 miles per 1,000 acres.

Maintain trails at maintenance level 3, 4 or 5 as described in Appendix G.

Visual

Standard:

Meet the Retention Visual Quality Objective in the foreground and middleground of Sensitivity Level 1 areas. Meet the Partial Retention Visual Quality Objective in the foreground and middleground of Sensitivity Level 2 areas. Meet the Modification VQO in all other areas.

Wildlife and Fish

General Direction:

Feature deer and quail; featured species are displayed by compartment in Appendix A.

Timber

General Direction:

Use management practices as described in Forest-wide and Management Area 1 standards.

Roads

Standard:

Same as Management Area 1 except that road density will average 2 miles per 1,000 acres.

Management Area 2 L

This area includes at least 5,000 acres of longleaf pine on the Croatan and is managed to perpetuate the longleaf pine ecosystem and associated wildlife, especially the red-cockaded woodpecker. The Forest visitor can see open park-like areas of sandy ridges with wiregrass and longleaf pine along with scrub oak clumps or scattered shrubs. C

Management Area 2 L - Standards

Recreation

Dispersed Recreation

Standards:

Provide opportunities for Roaded Natural 1 Experiences in areas accessible by State and Forest Service roads. Provide opportunities for Roaded Natural 2 Experiences in other areas. C

Provide for ORV opportunities. Route density will range between 0.25 mile to 2.0 miles per 1,000 acres. Some portions of the area may not be accessible for motorized recreation.

Maintain trails at maintenance level 3, 4 or 5 as described in Appendix G.

Visual

Standard:

Meet the Retention Visual Quality Objective in the foreground and middleground of Sensitivity Level 1 areas. Meet the Partial Retention Visual Quality Objective in the foreground and middleground of Sensitivity Level 2 areas. All other areas will meet Modification VQO.

Wildlife and Fish

General Direction:

Manage for red-cockaded woodpecker habitat. Feature deer and quail; featured species are displayed by compartment in Appendix A.

Timber

General Direction:

Use shelterwood for regeneration harvest.

Manage for longleaf pine regeneration on sites where understory is open and grassy, and on deep sandy sites now classified as low intensity management.

Standards:

C

If stand density exceeds 80 square feet of basal area per acre, begin with a preparatory cut if within 20 - 30 years of regeneration age.

About 5 years before the expected harvest date, make a seed cut, creating a shelterwood stand with a density of about 30 square feet per acre.

Monitor prospective seed crops through annual checks of flowers and conelets on sample trees.

When conelet counts indicate an adequate seed crop, prepare a seedbed.

Check regeneration areas annually to determine number and distribution of established seedlings.

Remove the overstory after a satisfactory stand of seedlings is established. The number of seedlings needed is displayed in the Regional Guide for the South.

After the overstory is removed, burn to control hardwood brush or brown-spot needle blight.

Roads

Standard:

Same as Management Area 1 except that road density will average 2 miles per 1,000 acres.

Management Area 3

This area provides opportunities for visitors to enjoy the Forest primarily on foot or horseback. Timber for commercial use is also provided.

Forest visitors may see evidence of timber harvesting from existing Forest Service roads, most of which are unpaved and not open for driving. Trees are a variety of ages. Animals that depend on young trees and associated plants are evident. Animals that need relative freedom from human disturbance, such as bear on the Croatan or turkey on both Forests, may also be found. Visitors will see people hiking, horseback riding, hunting and fishing, but no off-road vehicles will be on roads or trails.

Some trees will be cut when they are 40- to 80-years of age, depending on the type of tree. Other groups of trees will be thinned to promote growth of the remaining forest. These practices will favor animals that depend on plants associated with young trees. Groups of older trees, and the majority of the area that is not newly cut, will provide food and cover for other animals. New roads built primarily for timber harvest are narrow, often rough and irregular, and normally closed after trees are transported to market. Opportunities are provided for many dispersed recreation activities such as hiking, backpacking, and nature study.

Recreation

Dispersed Recreation

Standards:

Provide opportunities for Roaded Natural 2 Experience.

Maintain trails at maintenance level 2, 3 or 4 as described in Appendix G.

Visual

Same as Management Area 1.

Wildlife and Fish

General Direction:

Feature deer and turkey; featured species are displayed by compartment in Appendix A.

Timber

Same as Management Area 1.

Roads

Standard:

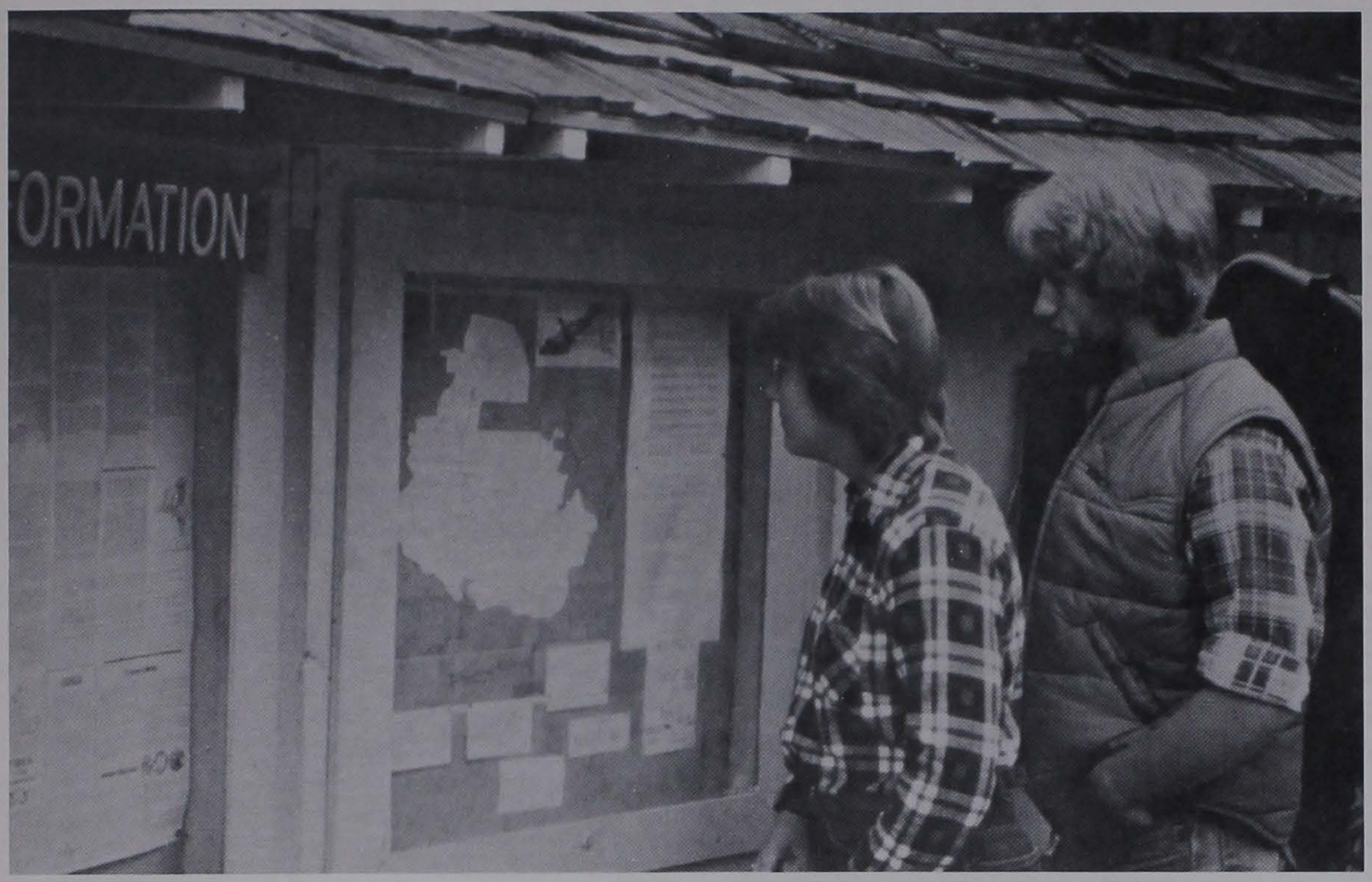
Manage arterial and collector roads as open. Manage most local roads, including those under special use permit, as closed to public vehicular use. Apply standards that meet minimum requirements for commercial vehicular use for newly constructed local roads. Develop average road densities of 2.5 to 3 miles per 1,000 acres.

Management Area 4

This area provides opportunities for visitors to enjoy the Forest on foot or horseback and see or hunt animals, such as bear and turkey, that depend on middle to older stages of vegetation and relative freedom from human disturbance.

Forest visitors see few places where trees have been cut or roads have been built. Most roads are not open for driving. Trees are a variety of types; older trees are most common. Visitors can see people hiking, horseback riding, hunting and fishing, but no off-road vehicles will be on roads or trails.

Trees are harvested to produce wood and enhance plant and animal diversity. Harvested areas are small and many older trees are left standing. Few roads are built, and all closed to motorized use. Food and cover are provided for animals that depend on older trees. Food is provided for other animals on the small part of the area that is newly cut, and by the controlled use of fire and mowing of openings. Opportunities are provided for many dispersed recreation activities such as hiking, backpacking, and nature study.



Management Area 4 - Standards

Recreation

Dispersed Recreation

Standards:

Provide opportunities for Roaded Natural 2 Experience.

Provide primarily for hiking use; provide no ORV use.

Maintain trails at maintenance levels 1, 2, 3, or 4 as described in Appendix G.

Visual

Standard:

Same as Management Area 2.

Wildlife and Fish

General Direction:

Feature deer and turkey; featured species are displayed by compartment in Appendix A.

Timber

General Direction:

Same as Management Area 2.

Roads

Standard:

Same as Management Area 3 except develop an average road density of 1.5 miles per 1,000 acres.

Management Area 5

This area provides opportunities for visitors to enjoy natural appearing environments.

Forest visitors can enjoy a natural environment, modified only by primitive trails and wildlife fields. Forest Service roads through the area are closed, except for roads which have traditionally provided access to other areas. Animals that depend on relative freedom from human disturbance are favored. Visitors see no new evidence of mining or timber production activities.

Trees are not cut for timber production. Food for animals is provided by creating and mowing openings and through the controlled use of fire. Opportunities are provided for many dispersed recreation activities such as hiking, backpacking, and nature study.

Management Area 5 - Standards

Recreation

Dispersed Recreation

Standards:

Provide opportunities for semi-primitive non-motorized experiences.

Provide for hiking and backpacking use; provide no ORV use.

Maintain trails for relatively primitive use at maintenance levels 1 through 3 as described in Appendix G.

Visual

Standard:

Meet the Retention VQO.

Wildlife and Fish

General Direction:

Feature bear, deer and waterfowl in appropriate compartments; featured species are displayed by compartment in Appendix A.

Provide for wildlife habitat diversity by burning and by creating and maintaining openings well dispersed over the area.

Timber

General Direction:

Cut trees for the purposes outlined in Forest-wide standards for areas classified as unsuitable for timber production.

Minerals

General Direction:

Peat will not be mined.

Roads

General Direction:

Construct no roads except for local roads to maintain or improve wildlife habitat. Close local roads to public vehicular use.

Management Area 6

This area provides support facilities for the Forests and the public. The management area includes District Offices, workcenters, and areas under special use permit such as utility corridors.

Management Area 6 - Standards

Recreation

Maintain area in a Roaded Natural or Rural ROS setting.

Interpretative Services

General Direction:

Provide information services for visitors at Ranger District Offices.

Standard:

Maintain trails at maintenance level 4 or 5 as described in Appendix G.

Visual

General Direction:

Manage all administrative sites consistent with a Forest environment and an inviting public perception; meet a Modification VQO.

Timber

General Direction:

Cut trees for the purposes outlined in Forest-wide standards for areas classified as unsuitable for timber production.

Water

Standards:

Maintain the sanitary condition of water supplies.

Identify floodprone areas for the public.

Fire

General Direction:

Control wildfires promptly.

Use prescribed burning to reduce wildfire danger and enhance desirable vegetation.

Roads

General Direction:

Design all roads for all-weather use and heavy traffic loads.

For other resources, refer to Forest-wide standards.

Management Area 7

This area provides visitor enjoyment of camping, picnicking, swimming, boating, and other developed recreation use, and for research and interpretation of significant cultural resource sites. Forest Service facilities provide a rustic setting for visitors to enjoy a forest environment.

Recreation

Developed Recreation

General Direction:

Manage developed sites to enhance activities associated with a forest environment, to provide a safe, esthetic, nonurban atmosphere, and to support dispersed recreation opportunities.

Standards:

Maintain and rehabilitate existing recreation facilities if use is 10% or more of practical capacity.

Shorten the use season or close a recreation facility if use is less than 10% of practical capacity for 3 consecutive years.

Expand existing areas or designate overflow areas if use equals practical capacity for 5 or more days per year, maintenance and rehabilitation have been accomplished, and the facility directly supports dispersed recreation opportunities.

Provide facilities at new locations only if they directly support dispersed recreation opportunities, and can be maintained at a low maintenance cost, according to the following priorities:

water access points;
trailheads;
cultural resource interpretation; and
facilities such as horse staging areas.

Visual

Standard:

Meet VQO's ranging from Retention to Modification that will maintain the recreational setting.

Timber

General Direction:

Cut trees for the purposes outlined in Forest-wide standards for areas classified as unsuitable for timber production.

For other resources, refer to Forest-wide standards.

Management Area 8

This area perpetuates the naturalness of Wilderness Areas while providing for the visitor enjoyment. Visitors can see and enjoy the natural ecosystems of the Birkhead Mountains on the Uwharrie and Catfish Lake South, Pocosin, Sheep Ridge, and Pond Pine areas on the Croatan.

The environment is protected, and recreation use is dispersed to provide maximum enjoyment for wilderness visitors.

Management Area 8 - Standards

Wilderness Attributes

General Direction:

Restore, maintain or enhance wilderness attributes including naturalness, solitude, and primitive recreation.

Allow natural processes to shape environment and determine species selection, distribution and population levels.

Recreation

General Direction:

Provide visitors the opportunity to experience wilderness with minimum regulation and with minimum impact to the wilderness.

Provide a semi-primitive non-motorized experience.

Disperse use through information, education, and trail design.

Promote "wilderness awareness" and "no-trace" use. Promote the concept that wilderness is primitive and rugged and that certain outdoor skills are necessary for using the area. Seek visitor compliance with restrictions designed to limit resource impact.

Encourage visitors not desiring a true wilderness experience or lacking in outdoor experience to use less primitive areas of the Forest.

Use all reasonable means to manage visitor use before implementing restrictions.

Manage use consistent with solitude and primitive recreation.

Make wilderness information available to all persons requesting it without advertising or promoting wilderness use.

Provide recreational activities that conform with wilderness values; in determining appropriate activities for the wilderness, the highest priority will be given uses which least alter or are most dependent upon the wilderness environment.

Provide for use of wilderness by the handicapped without special provisions or improvements.

Allow pets on a leash or under control.

Provide for primitive camping anywhere in the wilderness and encourage visitors to disperse use and practice "no-trace" camping techniques.

Standards:

Allow visitors to experience a wilderness environment by not reducing or eliminating personal risks associated with adverse weather conditions, isolation, natural physical hazards, and primitive travel and communication.

Use the minimum restrictions or controls necessary to protect the wilderness.

Use the following techniques for rehabilitating heavily impacted user sites:

- Define or confine the site with native materials;
- Fill compacted or eroded areas with soil;
- Revegetate or mulch the site with native materials;
- Remove or relocate fire rings; and
- Remove all make-shift structures and non-native materials.

Manage use up to an average of 3.0 RVD's/acre/year.

Recreation

Standards: (cont.)

Use subjective observations for "level-of-use" decisions.

Prohibit use of bicycles, other forms of mechanical transport, and motorized vehicles in the wilderness with the exception of wheelchairs.

Follow state regulations for "Game Lands" regarding public use of firearms. Restrict the discharging of firearms to the legal taking of game.

Allow recreational gold panning, but no mechanized equipment nor ground disturbance.

Permit campfires as an enjoyable part of a camping experience, but control adverse effects with the following techniques:

- Remove all but one fire ring in established campsites at least once annually;
- Dismantle any fire rings discovered outside of established campsites;
- Allow no cutting of green or standing dead trees for firewood;
- Encourage campers to use backpacking stoves instead of campfires; and
- Help visitors to use "no-trace" campfire use and campfire safety.

Trails and Facilities

General Direction:

Design and manage the trail system consistent with wilderness objectives for solitude, physical and mental challenge, spirit of adventure, and self-reliance.

Construct and maintain trails to the minimum standard necessary for protection of the soil, water, vegetation, and visual quality, user safety and long-term maintenance; consider visitor comfort and convenience consistent with a wilderness experience.

Allow trails that were constructed or maintained beyond wilderness standards to return to an appropriate standard through natural action.

Provide minimum-standard facilities, such as fire rings and latrines, only where absolutely necessary for the protection of the wilderness.

Use minimum trail signing and blazing to preserve pathfinding as a skill needed in the wilderness experience.

Provide visitor information other than trail signs outside the wilderness boundary.

Provide foot logs or bridges only when absolutely necessary for visitor safety or for protection of streambanks. Consider relocating the trail to a suitable natural crossing before constructing a footbridge.

Trails and Facilities (cont.)

Standards:

Manage trails for foot travel only.

Construct and maintain tread width to a maximum of 24 inches.

Maintain trails at maintenance level 1 or 2 as described in Appendix G.

Construct and maintain trails with nonmotorized equipment unless authorized by the Regional Forester to use mechanized equipment.

Give maintenance priority to correcting safety hazards and resource damage.

Use trail signing only for identifying a trail or for dispersing use. Place all but interior junction signs at wilderness portals.

Blaze trails only if the trail route cannot be distinguished on the ground or if needed to avoid a safety hazard. Use axe blazes only.

Cultural Resources

General Direction:

Allow natural processes to shape the condition of above ground cultural resource sites unless their continued existence is essential to cultural resource management. Provide no maintenance, rehabilitation, restoration, or interpretation unless approved by the Regional Forester.

Provide for scientific study of cultural resource sites consistent with wilderness, normally without any excavation or restoration.

Visual

General Direction:

Manage for maximum retention of the natural landscape.

Standards:

Meet Preservation VQO; only management activities with low visual impact such as trail construction, maintenance and signing are appropriate.

Vegetation

General Direction:

Protect natural ecological succession.

Cut trees and vegetation only for the construction and maintenance of trails and trail structures or for authorized emergency treatments for fire, insect or disease control.

Standard:

Use native materials only to revegetate denuded campsites or areas disturbed by fire suppression activities. Rehabilitate to as near-natural a condition as possible.

Wildlife and Fish

General Direction:

Provide no direct habitat improvements.

Feature bear on the Croatan; featured species are displayed by compartment in Appendix A.

Stock fish or animals only for the reintroduction of displaced native species or where stocking has been previously authorized and practiced.

Provide for legal hunting and fishing consistent with established game laws and wilderness.

Discourage visitor actions which alter the natural behavior of wildlife, such as dumping food or garbage.

Soil and Water

General Direction:

Maintain soils in a natural undisturbed state except for trail construction, use and maintenance, approved watershed restoration projects, wildfire control measures, and campsite rehabilitation. Favor natural healing of disturbed sites.

Maintain all water resources without developed improvements, impoundments or other modifications.

Inform wilderness users to purify drinking water.

Minerals

General Direction:

Allow no mining; all minerals under Federal ownership have been withdrawn from mining.

Lands

General Direction:

Acquire lands and interests in lands including outstanding and reserved mineral rights.

Maintain public ownership of all NFS lands.

Special Uses

General Direction:

Insure that wilderness remains free of nonconforming uses or improvements.

Issue no commercial permits other than for outfitter-guide services. Require outfitters and guides to use "no-trace" techniques. Allow no permanent camps.

Redistribute outfitter and guide use to nonwilderness areas when such use conflicts with public enjoyment of the wilderness.

Standards:

Limit the size of commercial and organized groups to 10.

Issue no permits for military training or maneuvers.

Issue no permits for competitive events.

Issue no permits for any private or commercial structures or improvements including electronic communication structures or facilities.

Issue no commercial permits for the removal of any forest resources including stone, moss, plants and plant products.

Issue permits for collection of specimen plants for research approved by the Regional Forester.

Allow collection of plant products (nuts, berries, cones) for personal use with no permit required. Issue no personal permits for the removal of any plants, stone or moss.

Prohibit fuelwood harvest under free or paid permits, including dead and down wood. Allow collection of dead and down wood for campfires.

Fire

General Direction:

Make suppression decisions with consideration for wilderness and adjacent land values, visitor safety, suppression costs, natural barriers, and the anticipated path of fire spread.

Fire (cont.)

Standards:

Confine, contain or control wildfires that do not threaten life or property outside the area at minimum total cost. Promptly control all other fires. Use expected fire behavior at the time of ignition to determine the appropriate suppression response.

Use prescribed burns ignited by qualified Forest Service officers to reduce, to an acceptable level, the risks and consequences of wildfire escaping from wilderness on the Croatan National Forest. C

Use mechanized equipment on the Croatan National Forest for wildfire suppression.

Insects and Disease

General Direction:

Allow insects and disease to follow their natural course in the wilderness ecosystem.

Consider control measures, with the approval of the Chief of the Forest Service, when there is a threat to adjacent NFS or private land.

Administration

General Direction:

Conduct necessary administrative activities in the manner most protective of the wilderness.

Allow administrative use of motorized vehicles, transport, or equipment for emergencies which involve the health and safety of humans.

Require the removal of downed aircraft by the owner or insurance company in such a manner as not to damage the wilderness resource. If removal is not practical or would cause damage to the resource, require the disposal of the aircraft in such a manner as to make the least visible environmental impact on the wilderness.

Allow routine aerial detection for wildfire and aerial surveillance for insect or disease infestation.

Research

General Direction:

Allow research, with the approval of the Regional Forester, for which a wilderness setting is essential. Require research to be conducted in accordance with wilderness objectives.

Require a permit for collection of specimen plants; do not allow removal of threatened of endangered species.

Standard:

Mark test plots in an inconspicuous manner not visually evident to the average user.

Management Area 9

C This area, the Catfish Lake Waterfowl Impoundment on the Croatan National Forest, is managed in cooperation with the North Carolina Wildlife Resources Commission to provide opportunities for Forest visitors to enjoy viewing and hunting waterfowl. The area is a 870-acre shallow water impoundment with vegetation grown as food for ducks and other waterfowl.

Management Area 9 - Standards

C

Recreation

Dispersed Recreation

General Direction:

Provide opportunities for public viewing of wildlife.

Provide interpretation of the area for visitors through signs and brochures.

Allow no ORV use.

Standard:

Provide for Roaded Natural 1 recreation opportunities.

Visual

Standard:

Meet the Modification VQO.

Wildlife and Fish

General Direction:

Feature waterfowl; enhance opportunities to manage waterfowl and fisheries through habitat improvements.

Lands

Maintain public ownership.

For other resources, refer to Forest-wide standards.

Management Area 10

Catfish, Great, and Long Lakes are managed to provide opportunities for Forest visitors to enjoy water-based recreation, fishing, and viewing and hunting waterfowl. The visitor can see people enjoying the natural beauty and recreational opportunities of the lakes.

Recreation

Dispersed Recreation

Standard:

Provide for Roaded Natural 1 recreation opportunities for access to the lakes.

Visual

C

Standard:

Meet the Retention VQO.

Wildlife and Fish

General Direction:

Feature waterfowl; provide sustained fishing opportunities and waterfowl habitat through habitat improvements and management.

For other resources, refer to Forest-wide standards.

SPECIAL INTEREST AREAS

The following is a description of and management direction for the special interest areas identified for registration by the Natural Heritage Program of the State of North Carolina. All of these special interest areas are classified as unsuitable for timber production and off-road vehicle use. Forest-wide standards apply to these areas.

Croatan

Cedar Point - White Oak River Marsh

This area is located off State Highway 58 in Carteret County, across the White Oak River from Swansboro. The area encompasses 260 acres of marsh and adjacent land including the Tideland Trail.

C

Significance:

The Cedar Point natural area of the White Oak River Marsh consists of a series of natural communities representative of coastal estuarine systems. Salt to brackish marsh occurs as well as upland forests dominated by a mixture of hardwoods and pines that contain elements of Maritime Forest. These Forests provide an excellent outdoor laboratory. In addition, the marshes provide important breeding and feeding habitat for the birds, fish, invertebrates and mammals that depend on Atlantic Coastal estuarine habitat. The Tideland Trail provides an outstanding opportunity to view and study a variety of flora and fauna.

Management Direction:

Maintain a diversity of habitats and provide access to the area for viewing and study. Enhance the area's attributes by protection, trail maintenance and carefully applied prescribed burning in specified areas.

Croatan Pocosins and Great Lake Sweet Gum Swamp Forest

The Croatan Pocosins are distributed throughout the central portion of the Croatan National Forest with portions in Carteret, Craven, and Jones counties. Most of the 34,820 acres are in the Sheep Ridge, Catfish Lake South, Pond Pine, and Pocosin Wilderness Areas. The Great Lake Sweet Gum Swamp Forest is included in the Croatan Pocosins; 330 acres bordering Great Lake are in private ownership.

Significance:

The Croatan Pocosins are among the best quality and largest examples of relatively undisturbed pocosin community types. This wetland ecosystem is one of the largest contiguous area of pocosins remaining on the coastal plain. The low pocosin community type in the Croatan National Forest is considered to be the best developed and oldest in North Carolina. The high pocosin and pond pine woodland community types are also present in large, contiguous units.

The mature sweetgum forest bordering the southern and eastern shores of Great Lake is one of the largest remaining examples of this plant community in the coastal plain region of North Carolina and the mid-Atlantic. The area is an unusual example of a nonriverine swamp forest natural community.

Several animal species of special interest inhabit the area, including a small population of the American alligator, a few nesting osprey, and a population of black bear. The Lake Ellis Simon-Great Lake area is a population center for black-throated green warbler. Red-shouldered hawks usually nest near the lake each year. Rare plant species in the sweetgum swamp forest include the southern twayblade and arrowleaf shieldwort or spoon flower.

C

Management Direction:

Maintain the natural "pocosin" condition. Allow no drainage or peat mining. Apply management direction for Management Area 8 to the 30,000 acres of pocosin in wilderness. Apply management direction for Management Area 5 to the remaining acres. Evaluate classification of these pocosins as a Research Natural Area (RNA).

Flanner Beach

The Flanner Beach area spans two tracts of NFS land, a portion of Fisher's Landing at the Riverdale Community and two areas within the Flanner Beach tract at the Croatan Community situated off U.S. Highway 70 in Craven County. The beach is 240 acres of NFS land with an additional 110 acres of private lands between the two NFS tracts.

Significance:

The Flanner Beach Natural Area is located on a landform of relict sand dunes up to 30 feet high, with marl limestone sediments between the ridges. Variations in soil and surface characteristics, from the well-drained highly-acidic slopes and uplands to the poorly-drained neutral-medium acidic alluvial deposit sites, produce a variety of plant communities. Marl limestone sediments are unusual geological features in the state; these sediments produce basic soil conditions which often produce uncommon plant species and communities.

This site provides fossils from the Tertiary and Quaternary periods. The abundant fossils represent species once common in the Neuse River embayment during interglacial periods of the Pleistocene Epoch. Underlying clayey soils contain old cypress stumps and iron cylinders which were formed by oxidation of roots.

The relatively undisturbed forest contains a variety of plant communities and diverse species. A mixture of oaks, beech, hickories, and loblolly pine generally comprise the canopy on the slopes and ridges. Gum and cypress swamp forest occurs in the low areas between the ridges. Variations in slope positions, gradients, and elevations contribute to variations in plant community composition and species dominance, resulting in the presence of certain species uncommon or rare in this region of the coast.

Management Direction:

Maintain diversity of plant communities and protection of geologic features. Allow compatible nonmotorized recreational activities; do not allow soil disturbing activities.

Gum Swamp Forest

This 40-acre Gum Swamp is located at the headwaters of the East Prong of Brices Creek southwest of Forest Service Road 156 off U.S. Highway 70 at the Croatan Community in Craven County.

Significance:

C

The Forest in this natural area is an excellent example of the Nonriverine Wet Hardwood Forest natural community and is of regional significance. This natural community type, essentially limited to the lower coastal plain, was formerly fairly common. Few such forests exist today. The Forest is mature with trees averaging 20+ inches in dbh. In addition, bottomland hardwood forests here provide habitat for red-shouldered hawk, black bear, and several species of warblers uncommon in the coastal plain.

Management Direction:

Maintain the mature gum swamp forest. Allow compatible dispersed recreation such as hunting or nature study.

Hunter's Creek Upland Forest

This upland forest is located along a branch, tributary to Hunter's Creek, southeast of Forest Service Road 603 off State Highway 58 (near the Kuhns Community) in Jones County. The area encompasses approximately 40 acres.

Significance:

The Mesic Mixed Hardwoods Forest (coastal plain subtype) is a rare community type. Hunter's Creek is a good example of this type with mature trees and little evidence of disturbance.

The Dry-Mesic Oak--Hickory Forest is a rare community in the coastal plain and lower coastal plain. Very few good examples are known. Hunter's Creek has unusual species associations of a principally piedmontane community at the edge of its range.

This association of the two communities enhances the natural value of the area. Examples of such Mesic Mixed Hardwoods Forest in the coastal plain are generally found on bluffs below uplands which have been modified to crops or loblolly pine plantation. The rare remaining occurrences of Dry-Mesic Oak--Hickory Forest in the coastal plain are usually small and isolated by surrounding farmlands. Hunter's Creek is unique in its location within the National Forest.

Management Direction:

Provide an old growth forest. Allow compatible low impact recreational use, such as hunting.

Island Creek

The Island Creek area of 120 acres is located north of State Road 1004, 5 miles east of Pollocksville in Jones County. It is situated along Island Creek which flows north to the Trent River and includes a Forest Service interpretive trail.

Significance:

The area is of statewide significance for plant species, natural communities and geomorphic structures. The area includes:

- The most extensive population of the Carolina spleenwort fern known in the North Carolina coastal plain;

- The larger of only two populations of the Tennessee bladder fern. The population is estimated at more than 1,000 clumps and is estimated to be 10 times larger than at other locations in Craven County. The species is separated by more than 400 miles from the nearest population in Tennessee;

- The hardwood forest of Florida adder's mouth known in only three North Carolina coastal plain locations;

- Historical reports of Godfrey's sandwort considered endangered throughout its range in the southeast and reported at only two North Carolina sites;

- Occurrence of an Umbraqualf soil, an unusual and very restricted moist, high base soil with a dark-colored surface horizon, associated with the extensive marl outcroppings of the River Bend limestone; and

- Excellent examples of a variety of vegetation associations in mature condition: slow and fast-flowing stream aquatic community, fresh water marsh, mixed hardwood swamp forest, cypress swamp forest, well-drained alluvial hardwood forest, beech woods phase of mesic hardwood forest, mixed mesophytic hardwood forest, upland pine forest, upland oak-hickory forest, and rare or uncommon plant species.

Management Direction:

Maintain the natural features, plant species, natural communities and geomorphic structures. Allow compatible low impact dispersed recreation, such as hunting and nature study. Evaluate classification of the Island Creek area as a RNA.

C

Little Road Longleaf Pine Woodlands and Savannas

This longleaf pine area is located west of the Croatan Community in Craven County along Forest Service Road 121 largely to the north of State Road 1100, with small portions to the south. It includes 3 segments which total approximately 340 acres.

Significance:

The Longleaf Pine Woodlands have 5 colonies of the red-cockaded woodpecker. This is one of the more concentrated populations of the species in the Croatan National Forest and is one of the more accessible places for study by researchers and birdwatchers.

The savannas in a powerline right-of-way, and their ecotones within the adjacent pine woodlands and pocosins, contain a large array of herbaceous plant species. Especially prominent is the variety of insect-eating and showy species, including pitcher plants, sundews, and orchids. The yellow fringeless orchid, occurs in one large population on the savanna; there are fewer than 8 sites currently known for the species in the state.

Management Direction:

Maintain the Longleaf Pine forest type and manage for the red-cockaded woodpecker. Allow compatible low impact dispersed recreation use. Apply additional direction for Management Area 4.

Millis Road Savanna and Pocosin

C The Millis Road Savanna, an area of approximately 370 acres, is located along Forest Service Road 128, approximately 6 miles west of Newport in Carteret County.

Significance:

This area consists of low sand ridges and shallow interlying swales which support the Pine Savanna natural community type dominated by longleaf pine and wiregrass. This is the best example of the type on the Croatan National Forest and one of the best in the coastal region of the state. It is bordered on the south by a large tract of low pocosin, with an association of pond pine and mixed broadleaf evergreen shrubs in the savanna-pocosin ecotone.

The red-cockaded woodpecker is present in at least two active colony sites. Two uncommon birds, the Bachman's sparrow and the Henslow's sparrow, winter in the wiregrass cover beneath the longleaf pine. The Bachman sparrow also nests here in what is considered to be its largest breeding population in the National Forest.

The riverbank sandreed is present in the savanna-pocosin ecotone. Other plant species associated with the savanna are stalked milkweed, scale-leaf gerardia and Venus' flytrap.

The site contains a landform of geologic interest; a prominent beach ridge system that is a relict of the Pleistocene period.

Management Direction:

Perpetuate the longleaf pine ecosystem and associated wildlife; manage for the red-cockaded woodpecker. Apply prescribed burning to maintain the ecosystem. Allow compatible nonmotorized recreation, including hunting. Apply additional direction for Management Area 2L for longleaf savanna and Management Area 5 for pocosin-type sites.

Patsy Pond

The Patsy Pond area is located north of Highway 24 just west of Broad Creek in Carteret County. The area encompasses approximately 420 acres of NFS land, an additional 25 acres are privately owned.

Significance:

The area has statewide significance for natural communities, endangered species and geomorphic features.

Ponds in the area appear to be natural impoundments of old streams. Geologists have described the site as part of the Neuse River "paleochannel". To the west and northwest of Patsy Pond, there are additional depressions that have "sinkhole" features. This variety of ponds contributes to a diversity of plant communities and provides a unique opportunity for geological and botanical research and education.

Various natural plant communities are associated with the different slope and water conditions. A diversity of community types exist from pond-to-pond and from southeast to northwest. Among the special-interest plant communities located in this natural area are unique assemblages of mixed herbs and grasses west of the ponds, grass and scrub-shrub associations on dry-mesic upland locations, and the longleaf pine-turkey oak-heath woodlands on the dry-xeric sand ridges and flats. C

Rare plant species present include the loose watermilfoil, dwarf bladderwort, flaxleaf seedbox, pondspice, Robbins' spikerush, and coast jointweed. Also present is a population of the uncommon quill-leaf duckpotato.

An active colony of red-cockaded woodpeckers is found in the longleaf pine savanna near the ponds. The Carolina gopher frog inhabits the sandy areas associated with the longleaf pine and turkey oak savannas near the ponds.

Management Direction:

Maintain or enhance the natural communities, endangered species and geomorphic features and offer an opportunity for their interpretation and study. Allow compatible low impact use, nature study, and hiking. Prescribed burn to maintain the longleaf stands. Apply additional direction for Management Area 2L.

Uwharrie

Abner Bog

The bog is located just north of State Road 1307 west of the Abner Community in Montgomery County and includes approximately 6 acres.

Significance: U

The Abner Bog is one of the few known examples of the Hillside Seepage Bog natural community type. It is characterized by being wetted primarily by seepage rather than by impeded drainage. The Abner site contains a population of purple pitcher plants which are rare in the piedmont.

Management Direction:

Maintain the community integrity of wetland herbs. Allow compatible burning, light recreational use, and some thinning of Forest canopy near the edges.

Badin Upland Depression Swamp

This upland swamp is located just south of Forest Service Road 576 about 1/2 mile northeast of Badin Dam in Montgomery County. The upland swamp consists of two depressions within an area of approximately 25 acres.

Significance:

These depression occur within a Dry-Mesic Oak Hickory Forest community and represent excellent examples of the Upland Depression Swamp Forest natural plant community which is considered rare in North Carolina and limited to the Carolina Slate Belt of Virginia, North Carolina and South Carolina.

In addition, the upland depressions support large breeding populations of several native amphibian species. These natural breeding sites are of scientific interest to herpetologists and population biologists since they are relatively undisturbed.

Management Direction:

Maintain the Forest canopy without modification of the natural drainage to maintain upland swamp conditions and plant community. Allow selective tree removal outside and adjacent to the area.

Birkhead Upland Forest

The Birkhead Upland Forest of 1,300 acres is located in Randolph County between State Roads 1107 and 1112 just south of State Highway 49 in the Birkhead Wilderness. It is accessible by foot from the Uwharrie Trail.

Significance:

This area represents one of the best examples of old growth stands of upland Forest communities occurring on felsic volcanic rocks in the piedmont region. The Forest communities consist of: Chestnut Oak--Scarlet Oak; Dry Oak-Hickory Forest; and Dry-Mesic Oak--Hickory Forest. This old growth hardwood forest is particularly valuable for scientific and educational purposes.

Management Direction:

Apply direction for Management Area 8 for description of management direction since the area is entirely within the Birkhead Mountains Wilderness.

Gold Mine Branch Longleaf Pine

This 23-acre longleaf pine area is located up Gold Mine Branch off Forest Service Road 555 just south of the Uwharrie Hunt Camp in Montgomery County.

Significance:

Occurrence of longleaf pine in the piedmont is quite unusual. In addition, this area consists of stoney land with a rather steep southwest facing slope in sharp contrast to the deep sands and flat coastal plain on which longleaf is generally found. The area is of regional significance as a natural community.

Management Direction:

Exclude intensive recreation use to maintain the natural features. Conduct prescribed burning in association with appropriate scientific study to determine the effect of burning on this community of longleaf pine.

Pleasant Grove Hardpan Bog

This 3-acre hardpan bog is located off State Road 1543 in the vicinity of the Pleasant Grove Church in Montgomery County.

Significance:

The bog consists of concentric zones of vegetation, open water, brush, hardwood and pine trees which correspond to depth and period of inundation. The bog is one of only three or four well-developed examples of this type of natural community whose distribution is limited to the Carolina Slate Belt of Virginia and the Carolinas.

Management Direction:

Maintain the various plant communities in a bog condition. Allow compatible low intensity recreation, such as hiking and hunting.

Roberdo Bog

The Roberdo Bog (5 acres) is situated just north of State Highways 24 and 27 in the Roberdo section of Montgomery County approximately 4 miles southwest of Troy.

Significance:

The bog is a small, water filled depression in a pine-dominated upland. It represents a very rare Natural Community in North Carolina. The Piedmont Hardpan Bog appears to be limited in distribution to the Carolina Slate Belt region of Virginia, North Carolina, and South Carolina. Only three examples of this Natural Community type are known in the piedmont of North Carolina. These three differ substantially in hydrology, flora, and fauna.

The mole salamander has been found in the Roberdo Bog. This species generally occurs in the coastal plain and the Roberdo Bog represents one of three known disjunct piedmont populations.

Management Direction:

Maintain the bog and conditions that promote breeding amphibians. Avoid affecting bog hydrology. Allow prescribed burning and other low impact actions. Evaluate harvesting practices in areas adjacent to the bog regarding possible environmental effects of hydrologic changes. Apply additional direction for Management Area 4.

Uwharrie River Slopes

The Uwharrie River Slopes are located along Forest Service Road 555 in the Badin Lake section south of the Uwharrie Hunt Camp in Montgomery County. The area is approximately 60 acres.

Significance:

This area provides an outstanding opportunity to observe five natural communities that include: Mesic Mixed Hardwoods (Piedmont subtype), Dry-Mesic Oak--Hickory Forest; Rocky Bar and Shore; Piedmont/Mountain Levee Forest and the unusual Basic Cliff. The Basic Cliff provides an opportunity to observe such species as sedum, chinquapin oak and mosses which are limited to or reach best development on basic (high pH) soils.

Management Direction:

Apply management practices to improve wildlife habitat, visual quality or low impact recreation use.

Special Interest Areas are distributed within Management Areas as follows:

Special Interest Area	Management Area Number	Acreage
Croatan		
Cedar Point - White Oak River Marsh	1	260
Croatan Pocosins and Great Lake Sweet Gum Swamp	8	30,000
	5	4,820
Flanner Beach	1	240
Gum Swamp Forest	1	40
Hunter's Creek Upland Forest	1	40
Island Creek	3	120
Little Road Longleaf Pine Woodlands and Savannas	4	340
Millis Road Savanna and Pocosin	2 L	240
	5	130
Patsy Pond	2 L	420
Uwharrie		
Abner Bog	1	6
Badin Upland Depression Swamp	1	25
Birkhead Upland Forest	8	1,300
Gold Mine Branch Longleaf Pine	1	23
Pleasant Grove Hardpan Bog	4	3
Roberdo Bog	4	5
Uwharrie River Slopes	1	60

CHAPTER IV

IMPLEMENTATION OF THE FOREST PLAN

This chapter discusses implementation of the Plan, monitoring and evaluation, and research needs for future Forest management.

IMPLEMENTATION DIRECTION

This Forest Plan provides management direction for the Forests for the next 15 years. Implementation of this direction is the key to translating goals, objectives, and standards into on-the-ground results. The Forest Plan is implemented through Budgeting and Annual Work Planning processes. These processes supplement the Forest Plan by making annual adjustments and changes needed to reflect current priorities.

Budget Proposals

The Forest Plan provides the management direction for developing multi-year implementation programs. The Plan's scheduled practices, grouped as projects, are multi-year program budget proposals which identify needed expenditures. The Forests' proposed annual program budget is the basis for the requested funding. Upon approval of a final budget for the Forests, the Annual Program of Work is finalized. The accomplishment of the Annual Program is a step in implementing the management direction of the Forest Plan.

Environmental Analysis

Projects and activities identified in the Forest Plan will undergo environmental analysis as they are planned for implementation. If the environmental analysis for a project shows that the management area prescription and standards can be met and that no environmental effects beyond those identified in the Forest Plan EIS are expected, the analysis will probably result in a categorical exclusion from preparation of an environmental disclosure document. A decision notice may be used to document the decision to proceed with a specific project. An analysis or a project file will be available for public review, but this will not necessarily be documented in an Environmental Assessment or an Environmental Impact Statement.

MONITORING AND EVALUATION

The purpose of monitoring and evaluation is to provide information on the progress and results of implementing the Forest Plan.

Monitoring and evaluation are to determine if:

- Goals and objectives are being met;
- The effects and costs of plan implementation are as predicted;
- Standards are being followed;
- Management area direction is being applied;
- Assumptions used during the planning process were reasonable;
- Management practices on adjacent or intermingled non-NFS lands are affecting the Forest Plan goals and objectives; and
- Implementation of the Forest Plan is adversely affecting other agencies in reaching their stated goals and objectives.

An Interdisciplinary (ID) Team with other Forest personnel will collect, analyze and report results of the monitoring process. The report will be presented to the Forest Supervisor no later than six months after the end of the Fiscal Year for which the report is made. This report will include at least the following information:

- Comparisons of measured vs. predicted costs, effects, outputs and services;
- Public comments received;
- A list of needs for changes in the monitoring process; and
- Recommended changes in management.

Based upon findings documented in the report, the ID team will recommend necessary changes to the Forest Supervisor. The recommended changes may be to:

- Refer recommended action to the appropriate line officer for improvement in application of management area direction and standards;
- Modify management area direction, prescriptions, or standards;
- Modify the allocation of prescriptions;
- Revise the schedule of outputs;
- Revise the unit costs of outputs; or
- Initiate revision of the Plan or accompanying environmental statement.

Monitoring reports will be maintained for future use in amending or revising the Forest Plan. An evaluation report of these findings and resulting decisions will be prepared and sent to the Regional Forester.

Appendix D displays the items to be included in the monitoring and evaluation process.

RESEARCH NEEDS

As a result of the planning process, several topics have been identified for potential research investigation. These topics focus on basic research needs of the physical, biological, and social environment. These topics are summarized in the following list:

--Ecological role of fire and effects on plants, particularly on sensitive species, pocosins, and longleaf pine/scrub oak communities;

--Long-term effects of toxic precipitation on forest ecosystems; and

--Biological assessment for bald eagles on the Croatan and Uwharrie.

AMENDMENTS AND REVISIONS

Plan Implementation

As soon as practicable after approval of the Plan, the Forest Supervisor shall ensure that, subject to valid existing rights, all outstanding and future permits, contracts, cooperative agreements, and other instruments for occupancy and use of affected lands are consistent with the Plan. Subsequent administrative activities affecting such lands, including budget proposals, shall be based on the Plan. The Forest Supervisor may change proposed implementation schedules to reflect differences between proposed annual budgets and appropriated funds.

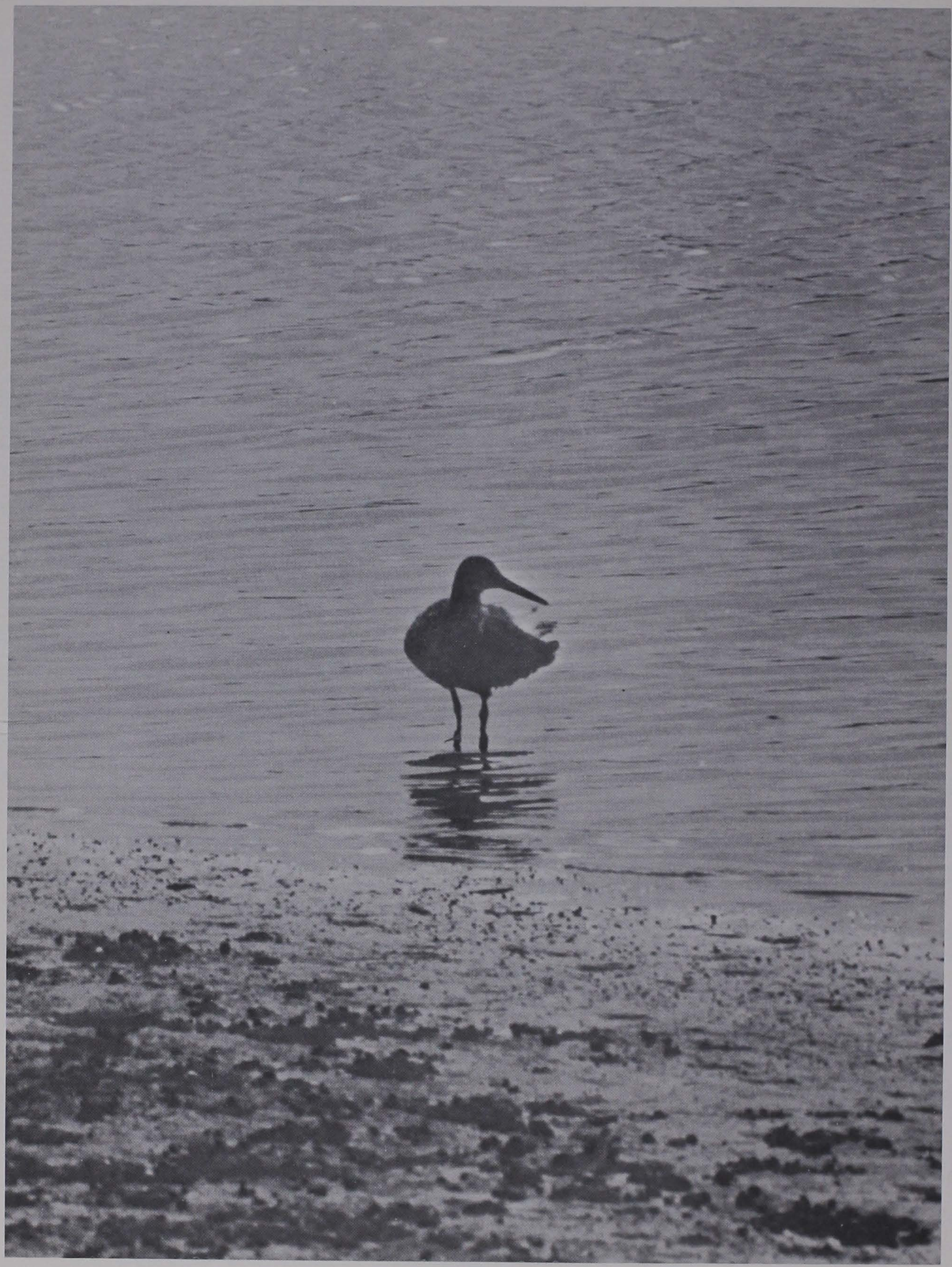
Amendment

The Forest Supervisor may amend the Forest Plan. Based on an analysis of the objectives, guidelines, and other contents of the Forest Plan, the Forest Supervisor shall determine whether a proposed amendment would result in a significant change in the Plan. If so, the Forest Supervisor shall follow the same procedure as required for development and approval of a Forest Plan. If not, the Forest Supervisor may implement the amendment following appropriate public notification and satisfactory completion of NEPA procedures.

Revision

A Forest Plan shall ordinarily be revised on a 10-year cycle or at least every 15 years. It also may be revised whenever the Forest Supervisor determines that conditions or demands in the area covered by the Plan have changed significantly or when changes in RPA policies, goals, or objectives would have a significant effect on Forest programs. In the monitoring and evaluation process, revisions may be recommended at any time. Revisions are not effective until considered and approved in accordance with the requirements for the development and approval of a Forest Plan. The Forest Supervisor shall review the conditions on the land covered by the Plan at least every 5 years to determine whether conditions or demands of the public have changed significantly.

The Forest Plan will be revised when necessary but no later than the year 2000.



CHAPTER V

APPENDICES

This chapter contains the following appendices that provide supplemental information for the Forest Plan.

A. MANAGEMENT AND PROTECTION ACTIVITIES FOR THREATENED, ENDANGERED, AND SENSITIVE ANIMAL AND PLANT SPECIES OCCURRING ON THE FORESTS, AND FEATURED SPECIES BY MANAGEMENT AREA AND COMPARTMENT

B. WATER RESOURCE OBJECTIVES BY ADMINISTRATIVE WATERSHED

C. ANALYSIS OF THE MANAGEMENT SITUATION, SUPPLY AND DEMAND

D. MONITORING AND EVALUATION

E. PROPOSED AND PROBABLE MANAGEMENT PRACTICES, INCLUDING TIMBER SALE SCHEDULES, BY MANAGEMENT AREA

F. RANGE POTENTIAL

G. TRAIL EXPERIENCE AND MAINTENANCE LEVELS

H. VISUAL QUALITY OBJECTIVES BY MANAGEMENT AREA

I. OUTPUTS AND ACTIVITIES

J. MANAGEMENT AREA MAPS

APPENDIX A

MANAGEMENT AND PROTECTION ACTIVITIES FOR THREATENED, ENDANGERED, AND SENSITIVE ANIMAL AND PLANT SPECIES OCCURRING ON THE FORESTS, AND FEATURED SPECIES BY MANAGEMENT AREA AND COMPARTMENT

Table A-1. Management and Protection Activities for Threatened, Endangered, and Sensitive Animal and Plant Species Occurring on the Croatan and Uwharrie National Forests.[1/]

Species	Fed. Status	State Status	Documented Presence	Management/ Protection
Red-cockaded woodpecker (Picoides borealis)	E	E	59 colonies (Active and Inactive) on Croatan	Protection; complete inventories to determine actual populations on NFS lands. Manage according to FSH 2609.23R - Red-cockaded Woodpecker Chapter. If "may affect" determination is made in project proposal, consult with USFWS.
American alligator (Alligator mississipiensis)	E	E	Transient on Croatan	Protection; determine population on NFS lands. Develop specific guidelines and objectives for management of species, in accordance with FSH 2609.23R - Alligator Chapter. If "may affect" determination is made during project proposal, consult with USFWS.
Bald eagle (Haliaeetus leucocephalis)	E	E	Transient on Croatan and Uwharrie	Protection; supplement transient population on NFS lands with hacking program in coordination with NCWRC, USFWS, TVA. Manage in accordance with FSH 2609.23R - Southern Bald Eagle Chapter. If "may affect" determination is made in project proposal, consult with USFWS.
Eastern cougar (Felis concolor cougar)	E	E	Unverified on Croatan and Uwharrie	If population becomes verified, then review management activities to provide for protection and recovery. Consult with USFWS on projects which "may affect" a verified population.

[1/] Plant species listed in "Endangered, Threatened, and Rare Plant Species of North Carolina: A Revised List" and which occur on the Forest will be adopted as Sensitive Species.

Table A-2. Management and Protection Activities for Animal and Plant Species Under Status Review for Potential Listing as Threatened or Endangered Species on or near the Croatan National Forest.

Species	Fed. Status	State Status	Documented Presence	Management/ Protection
Carolina madtom (Noturus furiosus)	SR	-	Near Forest	If species is discovered on NFS lands, protection and management will be provided to maintain or enhance the species.
Roughleaf loosestrife (Lysimachia asperulaefolea)	SR	E	On Forest	Protection where it exists. Management objective will be to prevent species decline such that federal listing is necessary.
Bachman's sparrow (Aimophila aestivalis)	SR	-	On Forest	Protection where it exists. Management objective will be to prevent species decline such that federal listing is necessary.
Carolina gopher frog (Rana areolata capito)	SR	-	On Forest	
Loose watermilfoil (Myriophyllum laxum)	SR	-	On Forest	
Wagner's spleenwort (Asplenium heteroresiliens)	SR	-	On Forest	
Pine barren gentian (Gentiana autumnalis)	SR	-	On Forest	
Godfrey's sandwort (Minuartia godfrey)	SR	-	On Forest	
Riverbank Sandgrass (Calamovilpa brevipilio)	SR	-	Undocumented	If species is discovered on NFS lands, protection and management will be provided to maintain or enhance the species.
Wireleaf drop seed (Sporobolis teretifolius)	SR	-	Undocumented	
Spring-flowering goldenrod (Solidago verna)	SR	-	Undocumented	
Chapman's sedge (Carex chapmaneae)	SR	-	Undocumented	
Sensitive joint-vetch (Aeschymomene virginica)	SR	-	Undocumented	

Table A-3. Management and Protection Activities for Animal and Plant Species Under Status Review for Potential Listing as Threatened or Endangered Species on or near the Uwharrie National Forest.

Species	Fed. Status	State Status	Documented Presence	Management/ Protection
Heart-leaved plantain (Plantago cordata)	SR	-	Undocumented	If species is discovered on NFS lands, protection and management will be provided to maintain or enhance the species.
Smooth coneflower (Echinacea laevigata)	SR	-	Undocumented	

Table A-4. Featured Species by Management Area and Compartment, Croatan National Forest.

Compartment Number	Featured[1/] Species	Management[2/] Area
1-2	turkey	3
3-4	deer	1
5-6	deer	4
7	deer	5,4
8-10	deer	1
11-12	deer	2
13-16	deer	1
17-18	deer	3
19	quail	2,5
20	quail	2
21-23	quail	2L
24	quail	2L,5
25	deer	2L
26	deer	5,2L
27	deer	2L,5
28	deer	5,2L
29-31	deer	2L
32	deer	1,2L
33	deer	1
34	deer	2L,8
35	deer	2L
36	deer	1
37	deer	2L
38-41	deer	1
42	deer	4
43	deer	2
44	deer	2,4,5
45	deer	4
46	deer	5
47	bear	8,2
48	waterfowl	5,9,10
49	bear	5
50	bear	5,4
51	bear	8,5
52	bear	8
53-54	bear	5,1
55	bear	5,8,2L
56	bear	8,2L
57	bear	8,5,2L
58	bear	5,3
59-60	bear	5,3
61	bear	5,2,3

1/ Red-cockaded woodpeckers are featured on all Colony Stands.

2/ Where multiple management areas are listed, those which comprise the most area within the compartment(s) are given first.

Table A-5. Featured Species by Management Area and Compartment, Uwharrie National Forest.

Compartment Number	Featured Species	Management Area[1/]
1	none	1
2	turkey	3
3-5	turkey	8,1
6	turkey	3,8
7	deer	3
8	turkey	3
9-12	deer	3
13-16	deer	1
17-20	turkey	3
21-25	deer	1
26	deer	4
27	turkey	3
28 (north of road)	turkey	3
28 (south of road)	deer	1
29 (east of road)	turkey	3
29 (other)	deer	1
30-37	deer	4
38-39	turkey	4
40	deer	1
41-43	turkey	4

[1/] Where multiple management areas are listed, those which comprise the most area within the compartment are listed first.

APPENDIX B

WATER RESOURCE OBJECTIVES BY ADMINISTRATIVE WATERSHED

Table B-1. Administrative Watershed Objectives and Stream Classification.

Number	Obj.[1/]	Name	Forest	Stream Classification[2/]
03 02 01 06 73	A	Bogue Group	Croatan	SA
03 02 02 04 71	A	Neuse River Group	Croatan	C-sw, SA, SC-sw
03 02 01 06 72	A	Newport River Group	Croatan	C, SA
03 02 02 04 70	A	Trent River Group	Croatan	C-sw, SB-sw, SC-sw
03 02 01 06 75	A	White Oak River	Croatan	C, SA, SC
03 04 01 03 64	A	Badin Lake Group	Uwharrie	WS-III, B
03 04 01 04 65	A	Lake Tillery Group	Uwharrie	C
03 04 01 04 68	A	Little River Group	Uwharrie	WS-III, C
03 04 01 03 69	A	Uwharrie River Group	Uwharrie	C

[1/] Objectives: A - multiple use

[2/] Stream Classifications by the NC Division of Environmental Management, Department of Natural Resources and Community Development —

Fresh waters:

WS-III suitable as a source of water supply for drinking, culinary, or food processing purposes after approved treatment equal to coagulation, sedimentation, filtration, and disinfection, etc., and any other usage requiring waters of lower quality.

B suitable for outdoor bathing, boating and wading, and any other usage requiring waters of lower quality.

C suitable for fish and wildlife propagation; also suitable for boating, wading, and other uses requiring waters of lower quality.

Tidal salt waters:

SA suitable for shell fishing for market purposes and any other usage requiring waters of lower quality.

SB suitable for bathing and any other usage except shellfishing for market purposes.

SC suitable for fishing and any other usage except bathing and shellfishing for market purposes.

Special designation:

sw Swamp waters. Those waters which are topographically located so as to generally have low velocities and certain other characteristics which are different from adjacent streams draining steeper topography and are designated by the letters "sw" in the schedule.

APPENDIX C

ANALYSIS OF THE MANAGEMENT SITUATION, SUPPLY AND DEMAND

INTRODUCTION

This appendix presents a summary of the Analysis of the Management Situation (AMS) on the Croatan and Uwharrie National Forests. This analysis displays the ability of the Forests to supply goods and services in response to society's demands.

SUPPLY CONDITIONS

Present supplies of various goods and services are displayed in Table C-1, and discussed in detail in Appendix K of the EIS.

Supply potential for these goods and services was determined through analysis of "maximum resource" benchmarks, discussed in detail in Appendix B of the EIS. These maximum resource levels are displayed in Table C-1.

DEMAND CONDITIONS

Demand projections for various categories of recreation, wildlife, and timber are displayed in Table C-1. These demand projections are based on the quantities that would be demanded at prices equal to the values used in the 1980 RPA Program. The Regional targets in the 1980 RPA Program correspond very closely with the demand trends established in the assessment for all resources in Region 8. The distribution of these targets in the Regional Guide for the South was generally accepted as the best estimate of quantity demanded at the RPA values. A horizontal demand through this quantity was assumed (with a horizontal demand assumption, the value of a product remains the same over a selected range of output). In the case of timber yields, the National Forests in Region 8 contribute only a small part of total production in the Region. Thus, the influence of National Forest timber on prices is minimal. A horizontal demand was assumed over a plus or minus 50% range. For other resources, the contribution of National Forests is enough that substantial changes in yields would influence prices. In these cases, a plus or minus 25% range in outputs around the horizontal demand was assumed to be appropriate.

As is indicated in Table C-1, under the Plan the Forests will meet estimated demand based on RPA Program levels for dispersed recreation and fall short of fulfilling these levels for developed recreation and timber harvest. Following Table C-1, a brief discussion of the supply and demand situation for selected categories of goods and services is provided.

Table C-1. Annual Average Supply and Demand Comparisons for 1986-2000 for Selected Goods and Services.[1/]

Goods and Services	Units/Year	Maximum Level	RPA[2/] Program	Demand[3/] Estimate	Present[4/] Level	Plan Level	Minimum Level
Recreation							
Developed	Thousand RVD's	162	82	162	100	130	0
Dispersed[5/]	Thousand RVD's	478	455	478	293	371	126
Wildlife and Fish	Thousand WFUD's	302	296	302	236	257	37
Timber	Thousand Board Feet	22,389	16,825	25,500	9,638	9,130	0

[1/] These are estimated output levels from benchmarks and alternatives described in the EIS for the Plan. Units/year are estimated for Recreation Visitor Days (RVD's), Wildlife and Fish User Days (WFUD's) and Board Feet of timber in thousands of units/year.

[2/] Based on the RPA Alternative in the Plan's EIS.

[3/] Demand estimates are based on RPA Program levels for the Croatan and Uwharrie together for timber, and on current use levels for recreation and wildlife. A horizontal demand curve (the value of a product remains the same over a range of outputs) is assumed with a range of 25% above and below RPA for most outputs, 50% above and below for timber outputs due to the small proportion of the market affected by National Forest outputs. Demand figures in this table represent the upper limits of these ranges.

[4/] Based on an average of 1981 through 1985.

[5/] Includes non-wildlife recreation only.

Developed Recreation

Croatan

On the Croatan, local residents are the primary users of developed recreation facilities, but some travelers and beach visitors use Forest Service campgrounds. Use has increased in the last decade. This increase is attributed to increased awareness of the public regarding the availability and benefits of outdoor recreation, improvements made to some facilities in the late 1970's, and more accurate use figures.

The projected annual demand for developed recreation opportunities by the year 2000 is 98,000 Recreation Visitor Days (RVD's). To supply more than 90,000 RVD's/year of developed recreation, added capacity would be required. Facilities, such as trailheads, water access points, and other facilities that support dispersed recreation opportunities, are the primary needs.

Uwharrie

Although there are presently only a limited number of developed recreation facilities on the Uwharrie, users come from throughout the central part of the state. Use has increased in the last decade. Use increased quickly when the initial loop at Badin Lake Campground was completed in 1981 and improvements were made to Cove Boat Ramp.

The projected annual demand for developed recreation opportunities by the year 2000 is for 32,000 RVD's. To supply more than 25,000 RVD's/year of developed recreation, added capacity would be required. Facilities, such as trailheads, water access points, and other facilities that support dispersed recreation opportunities, are the primary needs.

Dispersed Recreation

Croatan

Again, local residents are the primary Forest users. Use has increased in the last decade. Demand for dispersed recreation is expected to increase at approximately the rate projected in the Regional Guide for the South.

Following is the projected annual demand for non-wildlife dispersed recreation by ROS class: Projections to the year 2000 have been adjusted to reflect the most recent use figures.

Total RVD's	SPNM RVD's	RN2 RVD's	RN1 RVD's
170,000	2,000	13,000	155,000

Uwharrie

On the Uwharrie, people from the central portion of the state are the primary Forest users. Use has increased in the last decade. Demand for dispersed recreation is expected to increase at approximately the rate projected in the Regional Guide for the South.

Following is the projected annual demand for non-wildlife dispersed recreation by ROS class: Projections to the year 2000 have been adjusted to reflect the most recent use figures.

Total RVD's	SPNM RVD's	RN2 RVD's	RN1 RVD's
212,000	19,000	32,000	161,000

Wilderness

Croatan

Present use for the 4 Wilderness areas on the Forest is estimated to be approximately 1,500 RVD's per year. Interest in the areas is primarily scientific. Use increases are expected to be in nature study-related activities on the periphery of the areas.

The projected annual demand for wilderness recreation opportunities by the year 2000 is 1,700 RVD's.

Uwharrie

Present use for the Birkhead Mountains Wilderness is estimated to be approximately 12,000 RVD's per year. This is the only designated wilderness area within a 100 mile radius. Use is expected to reach a recommended capacity of 3 RVD's/acre before 1990. The Forest cannot meet wilderness demand in the central section of the state at the recommended capacity throughout the 15-year planning period. Wilderness in other sections of the state or in adjoining states must be used to satisfy demand.

The projected annual demand for wilderness recreation opportunities by the year 2000 is 16,400 RVD's which exceeds the recommended capacity of 3 RVD's/acre/year.

Timber

Croatan

The market area for the Croatan contains about 23 sawmills, veneer mills, pulp mills, and pulpwood yards. The estimated capacity of these mills is about 191 million board feet per year. The Forest supplies about 5% of local timber industry needs. None of the mills are totally dependent on National Forest timber, but some do depend on it for an important part of their supply. About 4 sales of over $10,000 have been made annually over the past several years. These sales have averaged 1.0 million board feet each.

The sales program is strongly influenced by the Small Business Administration (SBA) set-aside program which gives preference to buyers who must sell the sawtimber to primary processors qualifying as small businesses. At present, there is only one mill within a reasonable distance which buys timber from the Forest and qualifies as a small business. This affects prices for National Forest timber.

The hardwood on the Forest presents a special situation because most of it is small roundwood for which there is a very poor market. If hardwood were to be managed for timber production, better small roundwood markets would need to be developed.

Much of the private forest land in the area is managed on a 25-to 35-year rotation. The Croatan, with its longer rotations, will probably have a larger part of the sawlog and veneer market in the future.

Uwharrie

The market area for the Uwharrie has over 100 wood using mills. These include sawmills, veneer mills, plywood mills, and post mills. In addition, 23 pulpwood yards ship raw materials to mills outside the area. The sawmills have an estimated capacity of over 260 million board feet per year. The dependence of processors on National Forest timber ranges from about 10% for the larger mills to about 70% for one portable mill. Most of the mills in this area are classified as small businesses, so the set-aside program has no impact on timber prices. About 4 sales of over $10,000 have been made annually over the past several years. These sales have averaged 1.4 million board feet each.

There are large acreages of industry land which are managed on a 25-to 35-year rotation. The Uwharrie, with its longer rotations, will produce larger, more valuable timber than comparable private lands.

A new wood-using plant might be built in the area to use small roundwood and chips. The new hardwood mill in Troy should increase the demand for hardwood timber. These factors indicate a greater demand and value for timber from the Uwharrie.

Wildlife and Fish

Croatan

Estimates of wildlife demand have been drawn from documented demand for the game animals that are Management Indicator Species (MIS) and for which reliable data exists. Since these species represent critical habitats, effects of management practices on their populations reflect effects on many other species. Demand for nongame species, such as the red-cockaded woodpecker, is estimated to equal demand for game species.

White-tailed deer is the demand analysis species representing animals dependent on young trees and associated plants; the eastern gray squirrel, eastern wild turkey, and black bear represent animals that depend on mature, hard mast producing trees. Squirrel and bear also represent the need for old growth for production of cavities and dens. Turkey also represents the requirement for direct habitat improvements such as openings and prescribed burning. Demand analysis species for aquatic habitats are the redbreast sunfish and largemouth bass. Specific direct habitat improvements and access development for fisheries are unknown at this time. These needs will be determined by in-service fisheries biologists in coordination with the NCWRC.

Demand estimates, in Wildlife and Fish User Days (WFUD's), based on current use are:

Species	Annual Demand
white-tailed deer	28,810
eastern wild turkey	4,800
eastern gray squirrel	2,980
black bear	340
nongame	37,610
fish	29,160
waterfowl	21,000

These demand estimates are expected to follow a trend similar to that of dispersed recreation as projected in the Regional Guide for the South.

Uwharrie

Estimates of wildlife demand have been drawn from documented demand for the game animals that are Management Indicator Species (MIS) and for which reliable data exists. Since these species represent critical habitats, effects of management practices on their populations reflect effects on many other species. Demand for nongame species is estimated to equal demand for game species.

White-tailed deer is the demand analysis species representing animals dependent on young trees and associated plants; the eastern gray squirrel and eastern wild turkey represent animals that depend on mature, hard mast producing trees. Squirrel also represents the need for old growth for cavities and dens. Turkey also represents the requirement for direct habitat improvements such as openings and prescribed burning. Demand analysis species for aquatic habitats are the redbreast sunfish and largemouth bass. Specific direct habitat improvements and access development for fisheries are unknown at this time. These needs will be determined by in-service fisheries biologists in coordination with the NCWRC.

Demand estimates, in WFUD's, based on current use are:

Species	Annual Demand
white-tailed deer	42,530
eastern wild turkey	1,980
eastern gray squirrel	5,220
nongame	49,560
fish	17,000

These demand estimates are expected to follow a trend similar to that of dispersed recreation as projected in the Regional Guide for the South.

APPENDIX D

MONITORING AND EVALUATION

The following are explanations of the column headings for Table D-1:

Subject or Resource Element - This is the resource element being monitored.

Description of the Type of Activity to be Monitored - An indication of the subject which will be examined.

Intent of Monitoring Activity - A brief explanation of what each item will answer or address.

Monitoring Techniques and Data Sources - A list of reports, procedures and data sources used in monitoring.

Responsibility - The line or staff position responsible for coordinating the monitoring; District Ranger (D.R.), Staff Officer (S.O.) or Regional Office (R.O.).

Frequency of Measurement - A schedule of sampling or review; continuously (C), yearly (Y), or as needed.

Expected Reliability - The level of confidence with which the monitoring results can reflect actual effects or resources being monitored.

Expected Precision - The variability of data that are collected. A qualitative rating of High (H), Moderate (M), or Low (L) is used to rank expected precision.

Reporting Period - The frequency that results will be reported to the Forest Supervisor. Not all items can or need to be reported annually.

Variability that Would Initiate Further Action - A statement describing the tolerance limits that actual performance can deviate from planned performance. Deviation outside these limits can lead to further evaluation, plan amendment or plan revision.

Table D-1. Monitoring Plan

Subject	Type	Intent	Tech. & Sources	Respon.	Freq.	Relia.	Prec.	Period	Variab.
Recreation	Developed and Dispersed	Monitor effectiveness of management direction	Maps, EA's, TAU, RIM, on site visits	Rec. Staff	Y	L/M	L/M	5 yrs.	±15%
	Visual Quality	Measure compliance with VQO's	Field Reviews	Rec. Staff	Y	M	M	Y	Noncompliance with adopted VQO
	Off Road Vehicle Use	Compare uses, problems and solutions	Field contact, photo points, public comment	D.R.	Y	M	M	Y	±25%
	Cultural Resources	Evaluate the progress and success	EA's, EIS's, Field and spot cks., District reviews	Rec. Staff	Y	H	H	Y	When disturbed or damaged w/o prior mitigation measures
	Wilderness	Monitor use	Field checks, photo points	D.R.	Y	M	M	Y	±50%

Table D-1. Monitoring Plan (continued)

Subject	Type	Intent	Tech. & Sources	Respon.	Freq.	Relia.	Prec.	Period	Variab.
Wildlife & Fish	Threatened, Endangered & Sensitive Species other than red-cockaded woodpecker	Assure proper application of management standards	EA's, sale review, CISC, monitor water quality, special habitats, popula-tions data	Wildlife Staff	Y	H	M	Y	± 5%
	Red-cockaded Woodpecker	Measure recovery and maintenance of populations	Field reviews, coop. studies & review w/ appropriate personnel	Wildlife Staff, R.O., and others	Y	H	H	Y	±10%
	Other Management Indicator Species (MIS): Animals (black bear, wild turkey, white-tailed deer, gray squirrel, bobcat, and raccoon)	Determine population trends and relationship to any change in habitat	For hab.: CISC and additional inventory data For pops.: NCWRC harvest/ pop. data or pop. survey	Wildlife Staff and NCWRC	Y	Hab.-H Pop.-M	Hab.-H Pop.-M	Y	± 5%
	Species Associated w/Special Habitat: Pileated Woodpecker, Venus' Flytrap, Pitcher Plant, Longleaf Pine/Scrub Oak	Assure maintenance of plant and animal diversity and maintenance of viable populations	Field review; review w/ stated standards	Wildlife Staff	Y	Hab.-H Pop.-L	M	Y	Hab.- ± 5% Pop.- ±10%

Table D-1. Monitoring Plan (continued)

Subject	Type	Intent	Tech. & Sources	Respon.	Freq.	Relia.	Prec.	Period	Variab.
	Fish: (largemouth bass and redbreast sunfish)	Assure maintenance of aquatic plant and animal diversity and maintenance of minimum viable populations	Habitat: macro-benthic sampling & physio-chemical analysis & stream character-ization; Populations: Sampling by seining & electro-shocking; creel sur-veys in cooperation with NCWRC	Wildlife Staff/ NCWRC input	Y	M	H	Y	Hab.- ±25% Pop.- ±25%
Timber	ASQ Allowable Sale Quantity	Assure timber sold is within annual allowable sale quantity	Annual ASQ, Programmed sale statement, 5-yr. sale program	Timber Staff	Y	H	H	3, 5 & 10 yrs.	±10%
	Refore-station & Timber stand improvement	Assure cuttings are made; Scheduled reforestation and TSI is accomplished	1st & 3rd yr. plan-tation exams, Silvicultural activity control record and MAR system	Timber Staff	Y	H	H	Y	10%< 80%>
	Management Presc. & Silv. Standards	Assure compliance with Plan; periodically evaluate for appropriateness	Silvicul-tural exam., prescription management reviews & post-sale surveys	Timber Staff	Y	H	H	Y	Unacceptable results based on ID team review

Table D-1. Monitoring Plan (continued)

Subject	Type	Intent	Tech. & Sources	Respon.	Freq.	Relia.	Prec.	Period	Variab.
Timber (cont.)	Land Suitability Class	Re-exam and reclassify if conditions change	Silvicultural exam & CISC	Timber and Planning Staff	Y	H	H	Every 10 yrs.	When suitable land inventory changes more than 10%.
	Effects of implementing management practices, including size of openings	Compare actual outputs with Plan	Forest Mgmt. Control Record & Report; Cut & Sold Report; STARS; & CISC	Timber and Planning Staff	Y	H	H	Y	Unacceptable results based on ID team review.
	Insects & Disease	Determine acres & volumes affect; access effects of Forest management	FPM aerial reviews & biological evaluation & recommended actions	Timber Staff	When detected or once annually	M	M	Annual when detected	Based upon FPM biological evaluation
Water	Water Quality	Assess compliance with Federal, State and local standards	Observation of water quality	Soil & Water Staff and District	Y	M	H	Y	Water not meeting intended use
	Riparian Area Mgmt.	Assure compliance with standards for floodplains, wetlands, and watercourse protection strips	Field reviews, EA's and project reviews	Soil & Water Staff	Y	M	M	Y	±10%
Minerals	Leasing, exploration & removals	Evaluate effects of any minerals or energy development	Reviews of field operations, EA's and plans for mines and drill sites	Lands Staff Officer	Y	H	H	Y	±25%

Table D-1. Monitoring Plan (continued)

Subject	Type	Intent	Tech. & Sources	Respon.	Freq.	Relia.	Prec.	Period	Variab.
Public Issues/ Local Socio-Economics	Public response	Access effects of F.S. mgmt. on the public, social & financial status of local counties	Public contacts, 25% payment to states, report file 6540 & census data	Public Information and Planning Staff	Y	M	M	Y	-20%
Lands	Purchase & Exchange	Assure compliance with Land Ownership Adjustment Plan	Compare proposed adjustment plan	Lands Staff	As indiv. actions are proposed	H	H	Y	Monitoring objective is is preventive
	Management attainment, unit cost & value of outputs, summary of all monitoring	Comparison of measured vs. predicted costs, effects, outputs and services	All monitoring results, MAR, budget proposals & execution	Planning Staff	Ongoing	H	H	Y	±20%
Soils	Erosion Control Compliance	Assure success of erosion control practices on timber sale areas & construction sites	Field trips, EA's and plan review	Soil & Water & Engr. Staff	Y	M	H	Y	-10%
Roads	Percentage of distribution by aerial/ collector & local	Compare road construction mileages & distribution with needs expressed in Plan	Check TIS, county & State road maps	Engr. Staff	Y	H	H	Every 3 yrs.	±20%
	Constant & Intermittent Services	Compare road construction mileages & types with needs expressed in Plan	Journal vouchers & TIS	Engr. Staff	Y	H	H	Every 3 yrs.	±20
	Road vegetation compliance	Assure revegetation of temporary roads within 2 yrs. closure	Field reviews on sample basis	Engr./ Watershed Staff	Y	M	H	Y	-10%

Table D-1. Monitoring Plan (continued)

Subject	Type	Intent	Tech. & Sources	Respon.	Freq.	Relia.	Prec.	Period	Variab.
Fire	Acreage & number of wildfires by cause	Evaluate the extent & effects of wildfire on NFS lands	Individual fire reports (5100-29)	Fire Mgmt. Officer	Y	H	H	T	2 consecutive yrs. is > than the 5-yr. average
	Acres burned by prescribed fire by category	Evaluate the extent to which land mgmt. objectives are being met thru the use of prescribed fire	Review & evaluate Districts involved in prescribed burning	Fire Mgmt. Officer	Y	H	H	Y	Review of prescribed fire results reveal planned effects are not taking place
	Air Quality	Assure compliance with AQ standards for prescribed burning	Review prescribed burning plans & all public comments pertaining to it	Fire Mgmt. Officer	Y	H	H	Y	(Same as above)
Law Enforcement	Status report by incidents & man-hours	Evaluate effectiveness	Incident reports, citations issues & fire reports	Forest Special Agent	W	H	H	Y	Requiring shifts
Other Agency Plans	Effects of F.S. Plan & their outputs	Evaluate if implementation is adversely affecting reaching their stated goals & objectives	Discussions, reports & correspondence, & review plans	D.R./ S.O. Staff	C	H	H	Y	Implementation causing excessive and preventable hardships
Non-Nat'l Forest System (NFS) lands		Evaluate if adversely affecting the attainment of F.S. goals & objectives	(Same as above)	D.R./ S.O. Staff	C	H	H	Y	Identified conflicts lowering achievement of goals and objectives

APPENDIX E

PROPOSED AND PROBABLE MANAGEMENT PRACTICES, INCLUDING TIMBER SALE SCHEDULES, BY MANAGEMENT AREA

Table E-1. Proposed and Probable Management Practices for Management Area 1 (Annual Average 1986-2000).

Item	Average Annual Units
Recreation Management	
Dispersed	182 MRVD's [1/]
Cultural Resource Survey	960 Acres [2/]
Trail Construction/Reconstruction	1.5 Miles
Trail Maintenance	40 Miles
Visual Management	400 Acres
Wildlife and Fish	
Wildlife and Fish Habitat Improvement	570 Acres
Timber [3/]	
Timber Sales	3.1 MMBF
Silvicultural Exam./Prescriptions	2,071 Acres
Reforestation	352 Acres
Timber Stand Improvement	326 Acres
Soil and Water	
Soil and Water Improvement	3 Acres
Soil and Water Inventory	427 Acres
Lands	
Landline Location	1.7 Miles
Property Boundary Line Maintenance	15.9 Miles
Facilities	
Road Maintenance	76 Miles
Road Construction/Reconstruction	4.9 Miles
Fire	
Fuel Reduction	2310 Acres

1/ Value presented as Thousand Recreation Visitor Days (MRVD's), rather than acres, to match planning analysis.

2/ Acreage based on planned disturbances. Acreage increases as funding becomes available to complete Forest Cultural Resource Inventory.

3/ Acreage classified as suitable for timber production equals 20,714.

Table E-2. Proposed and Probable Management Practices for Management Area 2 (Annual Average 1986-2000).

Item	Average Annual Units
Recreation Management	
Dispersed	32 MRVD's [1/]
Cultural Resource Survey	150 Acres [2/]
Trail Construction/Reconstruction	.5 Mile
Trail Maintenance	10 Miles
Visual Management	50 Acres
Wildlife and Fish	
Wildlife and Fish Habitat Improvement	100 Acres
Timber [3/]	
Timber Sales	.3 MMBF
Silvicultural Exam./Prescriptions	267 Acres
Reforestation	51 Acres
Timber Stand Improvement	47 Acres
Lands	
Landline Location	.8 Mile
Property Boundary Line Maintenance	4.7 Miles
Facilities	
Road Maintenance	53 Miles
Road Construction/Reconstruction	.9 Mile
Fire	
Fuel Reduction	220 Acres

1/ Value presented as Thousand Recreation Visitor Days (MRVD's), rather than acres, to match planning analysis.

2/ Acreage based on planned disturbances. Acreage increases as funding becomes available to complete Forest Cultural Resource Inventory.

3/ Acreage classified as suitable for timber production equals 2,667.

Table E-3. Proposed and Probable Management Practices for Management Area 2 L
(Annual Average 1986-2000).

Item	Average Annual Units
Recreation Management	
Dispersed	98 MRVD's[1/]
Cultural Resource Survey	450 Acres[2/]
Trail Construction/Reconstruction	1.5 Miles
Trail Maintenance	15 Miles
Visual Management	115 Acres
Wildlife and Fish	
Wildlife and Fish Habitat Improvement	2,000 Acres
Timber[3/]	
Timber Sales	1.0 MMBF
Silvicultural Exam./Prescriptions	1,066 Acres
Reforestation	128 Acres
Timber Stand Improvement	118 Acres
Lands	
Landline Location	.5 Mile
Property Boundary Line Maintenance	2.9 Miles
Facilities	
Road Construction/Reconstruction	2.4 Miles
Fire	
Fuel Reduction	2,330 Acres

[1/] Value presented as Thousand Recreation Visitor Days (MRVD's), rather than acres, to match planning analysis.

[2/] Acreage based on planned disturbances. Acreage increases as funding becomes available to complete Forest Cultural Resource Inventory.

[3/] Acreage classified as suitable for timber production equals 10,656.

Table E-4. Proposed and Probable Management Practices for Management Area 3 (Annual Average 1986-2000).

Item	Average Annual Units
Recreation Management	
Dispersed	92 MRVD!s [1/]
Cultural Resource Survey	710 Acres [2/]
Trail Construction/Reconstruction	1 Mile
Trail Maintenance	30 Miles
Visual Management	270 Acres
Wildlife and Fish	
Wildlife and Fish Habitat Improvement	2,200 Acres
Timber [3/]	
Timber Sales	2.3 MMBF
Silvicultural Exam./Prescriptions	1,751 Acres
Reforestation	248 Acres
Timber Stand Improvement	230 Acres
Soil and Water	
Soil and Water Improvement	5 Acres
Soil and Water Inventory	733 Acres
Lands	
Landline Location	1.8 Miles
Property Boundary Line Maintenance	11 Miles
Facilities	
Road Maintenance	36 Miles
Road Construction/Reconstruction	2.2 Miles
Fire	
Fuel Reduction	640 Acres

1/ Value presented as Thousand Recreation Visitor Days (MRVD's), rather than acres, to match planning analysis.

2/ Acreage based on planned disturbances. Acreage increases as funding becomes available to complete Forest Cultural Resource Inventory.

3/ Acreage classified as suitable for timber production equals 17,508.

Table E-5. Proposed and Probable Management Practices for Management Area 4
(Annual Average 1986-2000).

Item	Average Annual Units
Recreation Management	
Dispersed	105 MRVD's[1/]
Cultural Resource Survey	810 Acres[2/]
Trail Construction/Reconstruction	1.5 Miles
Trail Maintenance	30 Miles
Visual Management	280 Acres
Wildlife and Fish	
Wildlife and Fish	2,330 Acres
Habitat Improvement	
Timber[3/]	
Timber Sales	2.4 MMBF
Silvicultural Exam./Prescriptions	1,680 Acres
Reforestation	283 Acres
Timber Stand Improvement	262 Acres
Soil and Water	
Soil and Water Improvement	4 Acres
Soil and Water Inventory	733 Acres
Lands	
Landline Location	1.9 Miles
Property Boundary Line	
Maintenance	11.5 Miles
Facilities	
Road Maintenance	40 Miles
Road Construction/Reconstruction	2.5 Miles
Fire	
Fuel Reduction	1,110 Acres

1/ Value presented as Thousand Recreation Visitor Days (MRVD's), rather than acres, to match planning analysis.

2/ Acreage based on planned disturbances. Acreage increases as funding becomes available to complete Forest Cultural Resource Inventory.

3/ Acreage classified as suitable for timber production equals 16,755.

Table E-6. Proposed and Probable Management Practices for Management Area 5 (Annual Average 1986-2000).

Item	Average Annual Units
Recreation Management	
Dispersed	6 MRVD's[1/]
Cultural Resource Survey	55 Acres[2/]
Trail Construction/Reconstruction	.5 Mile
Trail Maintenance	10 Miles
Visual Management	25 Acres
Wildlife and Fish	
Wildlife and Fish Habitat Improvement	1,000 Acres
Lands	
Landline Location	3.2 Miles
Property Boundary Line Maintenance	21 Miles
Facilities	
Road Maintenance	20 Miles
Fire	
Fuel Reduction	1,050 Acres

1/ Value presented as Thousand Recreation Visitor Days (MRVD's), rather than acres, to match planning analysis.

2/ Acreage based on planned disturbances. Acreage increases as funding becomes available to complete Forest Cultural Resource Inventory.

Table E-7. Proposed and Probable Management Practices for Management Area 6 (Annual Average 1986-2000).

Item	Average Annual Units
Recreation Management	
Dispersed	3 MRVD's[1/]
Cultural Resource Survey	3 Acres[2/]
Visual Management	10 Acres

1/ Value presented as Thousand Recreation Visitor Days (MRVD's), rather than acres, to match planning analysis.

2/ Acreage based on planned disturbances. Acreage increases as funding becomes available to complete Forest Cultural Resource Inventory.

Table E-8. Proposed and Probable Management Practices for Management Area 7
(Annual Average 1986-2000).

Item	Average Annual Units
Recreation Management	
Developed	115 MRVD's [1/]
Cultural Resource Survey	50 Acres [2/]

[1/] Value presented as Thousand Recreation Visitor Days (MRVD's), rather than acres, to match planning analysis. Increased capacity at existing developed areas that support dispersed recreation opportunities (provision of overflow areas, groups areas, additional sites, and other improvements) will provide for 325 additional people at one time (PAOT) and 15,000 additional RVD's per year practical capacity. Numbers and types of facilities to be provided by 2000 are: 10 water access points; 22 trailhead parking areas (for horse, hiking, and ORV trails); and 4 cultural resource interpretation sites.

[2/] Acreage based on known acreage of existing developed recreation sites.

Table E-9. Proposed and Probable Management Practices for Management Area 8
(Annual Average 1986-2000).

Item	Average Annual Units
Recreation Management	
Dispersed	19 MRVD's [1/]
Trail Construction/Reconstruction	1 Mile
Trail Maintenance	20 Miles
Wilderness Managment	34,790 Acres
Lands	
Landline Location	1.5 Miles
Property Boundary Line Maintenance	9 Miles

[1/] Value presented as Thousand Recreation Visitor Days (MRVD's), rather than acres, to match planning analysis.

Table E-10. Proposed and Probable Management Practices for Management Area 9
(Annual Average 1986-2000).

Item	Average Annual Units
Recreation Management	
Dispersed	6 MRVD's [1/]
Lands	
Property Boundary Line	
Maintenance	.5 Mile
Facilities	
Road Maintenance	5 Miles
Fire	
Fuel Reduction	340 Acres

[1/] Value presented as Thousand Recreation Visitor Days (MRVD's), rather than acres, to match planning analysis.

Table E-11. Proposed and Probable Management Practices for Management Area 10
(Annual Average 1986-2000).

Item	Average Annual Units
Recreation Management	
Dispersed	17 MRVD's [1/]

[1/] Value presented as Thousand Recreation Visitor Days (MRVD's), rather than acres, to match planning analysis.

Table E-12. Summary of Timber Implementation Schedules.

Croatan National Forest

Fiscal Year	Acres to be: Regenerated	Acres to be: Thinned	Volume (MMBF)	Road Miles to be: Constructed	Reconstructed
86	357	652	4.440	2.2	3.0
87	543	432	2.866	2.9	4.0
88	508	324	3.867	5.5	5.5
89	140	357	2.040	0.0	3.0
90	250	396	2.450	2.3	4.5
91	240	326	2.500	2.1	2.0
92	260	360	2.600	3.9	2.0
93	311	342	3.842	2.3	1.0
94	270	330	3.100	0.5	1.0
95	410	300	6.000	1.0	0.5

Uwharrie National Forest

Fiscal Year	Acres to be: Regenerated	Acres to be: Thinned	Volume (MMBF)	Road Miles to be: Constructed	Reconstructed
86	382	387	5.370	4.1	9.1
87	491	200	5.088	3.7	2.2
88	559	200	5.432	1.8	2.0
89	415	183	4.110	3.1	5.0
90	430	175	4.894	2.1	0.8
91	448	449	5.272	1.1	0.0
92	270	411	5.274	2.2	0.5
93	320	139	3.650	1.3	0.0
94	280	585	5.461	2.2	0.0
95	405	375	5.770	2.5	0.0

Table E-13. Timber Implementation Schedules.

Fiscal Year 1986(FY 86)

AREA LOCATION	AREA[1/] (Acres)		VOLUME[2/] (MMBF)	ROAD MILES[3/]		HARVEST METHODS[4/]
	Harvest Type			C	R	
Compartment	Regen.	Thin.				
Management Area 1						
Croatan						
Compartment 41	56	175	0.796	0.4	0	
Compartment 4	142	16	1.316	1.1	0	
Uwharrie						
Compartment 28	40	10	0.400	0.0	0.0	
Compartments 13,15	106	10	1.517	0.0	7.0	
Compartment 29	100	272	2.192	0.6	1.2	
Total Management Area 1	444	483	6.221	2.1	8.2	

1/ Area = Area of timber harvest by regeneration or thinning.
2/ Volume = Volume to be sold, in million board feet (MMBF).
3/ Road Miles: C = Construction; R = Reconstruction.
4/ Actual harvest methods will be determined through site-specific environmental analysis. Modified even-aged harvest methods will be used where needed to maintain visual quality objectives.

Table E-13. Timber Implementation Schedules (continued).

FY 86 (continued)

AREA LOCATION	AREA (Acres)		VOLUME (MMBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 2 L						
Croatan						
Compartment 56	115	293	1.212	0.0	2.0	
Compartment 25	44	168	1.116	0.7	1.0	
Total Management Area 2 L	159	461	2.328	0.7	3.0	
Management Area 4						
Uwharrie						
Compartment 41	136	95	1.261	3.5	0.9	
Total Management Area 4	136	95	1.261	3.5	0.9	
TOTAL FY 86	739	1039	9.810	6.3	12.1	

Table E-13. Timber Implementation Schedules (continued).

Fiscal Year 1987(FY 87)

AREA LOCATION	AREA (Acres)		VOLUME (MMBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 1						
Croatan						
Compartment 2	27	100	0.291	0.3	0.0	
Compartment 32	20	23	0.135	0.0	0.0	
Uwharrie						
Compartment 1	69		0.725	0.2	0.0	
Compartment 6	40	50	0.500	1.2	0.0	
Total Management Area 1	156	173	1.651	1.7	0.0	
Management Area 2						
Croatan						
Compartment 20	50	61	0.236	0.0	0.5	
Compartment 43	81		0.364	0.8	1.5	
Compartment 11	42	100	0.448	0.5	0.0	
Total Management Area 2	173	161	1.048	1.3	2.0	

Table E-13. Timber Implementation Schedules (continued).

FY 87 (continued)

AREA LOCATION	AREA (Acres)		VOLUME (MBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 2 L						
Croatan						
Compartment 21	67		0.341	0.4	0.0	
Compartment 28		35	0.039	0.0	0.0	
Compartment 35	131	35	0.487	0.5	1.5	
Total Management Area 2 L	198	70	0.867	0.9	1.5	
Management Area 3						
Uwharrie						
Compartment 11	145	90	1.619	1.3	0.0	
Total Management Area 3	145	90	1.619	1.3	0.0	

Table E-13. Timber Implementation Schedules (continued).

FY 87 (continued)

AREA LOCATION	AREA (Acres)		VOLUME (MMBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 4						
Croatan						
Compartment 50	125	78	0.525	0.4	0.5	
Uwharrie						
Compartment 30	100		1.150	1.0	1.0	
Compartment 32	137	60	1.094	0.0	1.2	
Total Management Area 4	362	138	2.769	1.4	2.7	
TOTAL FY 87	1,034	632	7.954	6.6	6.2	

Table E-13. Timber Implementation Schedules (continued).

Fiscal Year 1988(FY 88)

AREA LOCATION	AREA (Acres)		VOLUME (MBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 1						
Croatan						
Compartment 38	175	74	1.167	3.0	2.0	
Uwharrie						
Compartment 22	125		1.000	0.0	0.0	
Total Management Area 1	300	74	2.167	3.0	2.0	
Management Area 2 L						
Croatan						
Compartment 24	50	55	0.216	0.0	0.0	
Total Management Area 2 L	50	55	0.216	0.0	0.0	
Management Area 3						
Croatan						
Compartment 17	124		0.703	0.0	0.0	

Table E-13. Timber Implementation Schedules (continued).

FY 88 (continued)

AREA LOCATION	AREA (Acres)		VOLUME (MMBF)	ROAD MILES		PROBABLE HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 3 (continued)						
Uwharrie						
Compartment 10	166	60	1.693	0.7	1.0	
Total Management Area 3	290	60	2.396	0.7	1.0	
Management Area 4						
Croatan						
Compartment 7	40	40	0.262	0.0	1.5	
Compartment 42	119	155	1.519	2.5	2.0	
Uwharrie						
Compartment 34	105	40	1.072	0.3	0.5	
Compartment 33	163	100	1.667	0.8	0.5	
Total Management Area 4	427	335	4.520	1.1	4.5	
TOTAL FY 88	1,067	524	9.299	7.3	7.5	

Table E-13. Timber Implementation Schedules (continued).

Fiscal Year 1989(FY 89)

AREA LOCATION	AREA (Acres)		VOLUME (MMBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 1						
Uwharrie						
Compartment 25	175		1.400	1.3	0.5	
Compartment 14	60	100	0.900	0.3	1.5	
Total Management Area 1	235	100	2.300	1.6	2.0	
Management Area 2 L						
Croatan						
Compartment 29	40	47	0.777	0.0	1.0	
Compartment 37	50	100	0.546	0.0	1.5	
Compartment 57	50	150	0.600	0.0	0.5	
Compartment 27		60	0.117	0.0	0.5	
Total Management Area 2 L	140	357	2.040	0.0	3.0	

Table E-13. Timber Implementation Schedules (continued).

FY 89 (continued)

AREA LOCATION	AREA (Acres)		VOLUME (MMBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 3						
Uwharrie						
Compartment 19	70	0	0.560	0.3	3.0	
Total Management Area 3	70	0	0.560	0.3	3.0	
Management Area 4						
Uwharrie						
Compartment 35	110	83	1.250	1.2	0.0	
Total Management Area 4	110	83	1.250	1.2	0.0	
TOTAL FY 89	555	540	6.150	3.1	8.0	

Table E-13. Timber Implementation Schedules (continued).

Fiscal Year 1990(FY 90)

AREA LOCATION	AREA (Acres)		VOLUME (MMBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 1						
Croatan						
Compartment 3	80	150	1.000	1.0	1.5	
Compartment 33	100	100	0.800	1.0	2.0	
Compartment 15	70	96	0.600	0.3	1.0	
Compartment 54		50	0.050	0.0		
Total Management Area 1	250	396	2.450	2.3	4.5	

Table E-13. Timber Implementation Schedules (continued).

FY 90 (continued)

AREA LOCATION	AREA (Acres)		VOLUME (MMBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 3						
Uwharrie						
Compartment 18	160	75	1.880	1.0		
Compartment 9	120	50	1.360	0.3		
Compartment 7	150	50	1.654	0.8	0.8	
Total Management Area 3	430	175	4.894	2.1	0.8	
TOTAL FY 90	680	571	7.344	4.4	5.3	

Table E-13. Timber Implementation Schedules (continued).

Fiscal Year 1991(FY 91)

AREA LOCATION	AREA (Acres)		VOLUME (MBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 1						
Croatan						
Compartment 13	60	60	0.600	0.0	0.5	
Total Management Area 1	60	60	0.600	0.0	0.5	
Management Area 2 L						
Croatan						
Compartment 31	70	155	0.800	1.0	1.5	
Total Management Area 2 L	70	155	0.800	1.0	1.5	

Table E-13. Timber Implementation Schedules (continued).

FY 91 (continued)

AREA LOCATION	AREA (Acres)		VOLUME (MMBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 3						
Croatan						
Compartment 59	50	30	0.300	0.8	0.0	
Uwharrie						
Compartment 2	100	127	1.560	0.8	0.0	
Total Management Area 3	150	157	1.860	1.6	0.0	
Management Area 4						
Croatan						
Compartment 45	60	81	0.800	0.3	0.0	
Uwharrie						
Compartment 43	129	91	1.196			
Compartment 31	189	132	1.746			
Compartment 36	30	99	0.770	0.3	0.0	
Total Management Area 4	408	403	4.512	0.6	0.0	
TOTAL FY 91	688	775	7.772	3.2	2.0	

Table E-13. Timber Implementation Schedules (continued).

Fiscal Year 1992(FY 92)

AREA LOCATION	AREA (Acres)		VOLUME (MMBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 2						
Croatan						
Compartment 61	30	30	0.300	0.4	0.5	
Total Management Area 2	30	30	0.300	0.4	0.5	
Management Area 2 L						
Croatan						
Compartment 26	20	30	0.200	0.0	0.5	
Compartment 30	50	50	0.300	2.0	0.0	
Compartment 34	80	200	1.500	1.0	0.0	
Total Management Area 2 L	150	280	2.000	3.0	0.5	
Management Area 3						
Croatan						
Compartment 58	60	30	0.150	0.5	0.0	
Compartment 60	20	20	0.150	0.0	0.5	

Table E-13. Timber Implementation Schedules (continued).

FY 92 (continued)

AREA LOCATION	AREA (Acres)		VOLUME (MBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Uwharrie						
Compartment 8	30	121	0.966	0.8	0.0	
Compartment 12	70	50	0.960	0.3	0.5	
Total Management Area 3	180	221	2.226	1.6	1.0	
Management Area 4						
Uwharrie						
Compartment 38	90	104	1.552	0.3		
Compartment 39	80	136	1.796	0.3		
Total Management Area 4	170	240	3.348	0.6	0.0	
TOTAL FY 92	530	771	7.874	5.6	2.0	

Table E-13. Timber Implementation Schedules (continued).

Fiscal Year 1993(FY 93)

AREA LOCATION	AREA (Acres)		VOLUME (MMBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 1						
Croatan						
Compartment 40	100	100	1.200	0.0	1.0	
Uwharrie						
Compartment 21	70	50	0.960			
Compartment 24	120	0	0.960	0.7	0.0	
Compartment 23	70	0	0.560	0.3	0.0	
Compartment 40	60	89	1.170	0.3	0.0	
Total Management Area 1	420	239	4.850	1.3	1.0	

Table E-13. Timber Implementation Schedules (continued).

FY 93 (continued)

AREA LOCATION	AREA (Acres)		VOLUME (MMBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 2						
Croatan						
Compartment 12	80	125	1.000	1.5	0.0	
Total Management Area 2	80	125	1.000	1.5	0.0	
Management Area 4						
Croatan						
Compartment 5	31	17	0.242	0.0		
Compartment 6	100	100	1.400	0.8		
Total Management Area 4	131	117	1.642	0.8		
TOTAL FY 93	631	481	7.492	3.6	1.0	

Table E-13. Timber Implementation Schedules (continued).

Fiscal Year 1994(FY 94)

AREA LOCATION	AREA (Acres)		VOLUME (MMBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 1						
Croatan						
Compartment 8	60	50	0.800	0.5	0.5	
Compartment 9	70	100	1.000	0.0	0.0	
Compartment 53	20	30	0.100	0.0	0.0	
Uwharrie						
Compartment 4	10	0	0.040	0.2	0.0	
Total Management Area 1	160	180	1.940	0.7	0.5	

Table E-13. Timber Implementation Schedules (continued).

FY 94 (continued)

AREA LOCATION	AREA (Acres)		VOLUME (MMBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 3						
Croatan						
Compartment 18	60	100	0.700	0.0	0.5	
Uwharrie						
Compartment 20	70	119	1.571	0.7	0.0	
Compartment 27	60	125	1.480	0.3	0.0	
Total Management Area 3	190	344	3.751	1.0	0.5	
Management Area 4						
Croatan						
Compartment 44	60	50	0.500	0.0	0.0	
Uwharrie						
Compartment 42	80	91	0.640	0.7	0.0	
Compartment 37	60	250	1.730	0.3	0.0	
Total Management Area 4	200	391	2.870	1.0	0.0	
TOTAL FY 94	550	915	8.561	2.7	1.0	

Table E-13. Timber Implementation Schedules (continued).

Fiscal Year 1995(FY 95)

AREA LOCATION	AREA (Acres)		VOLUME (MBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 1						
Croatan						
Compartment 41	100	100	1.600	0	0.3	
Compartment 04	150	50	2.500	0	0.2	
Uwharrie						
Compartment 16	100	100	1.600	0		
Total Management Area 1	350	250	5.700	0	0.5	
Management Area 2						
Croatan						
Compartment 43	60	50	0.800	0.5	0.0	
Total Management Area 2	60	50	0.800	0.5	0.0	

Table E-13. Timber Implementation Schedules (continued).

FY 95 (continued)

AREA LOCATION	AREA (Acres)		VOLUME (MMBF)	ROAD MILES		HARVEST METHODS
Compartment	Harvest Type			C	R	
	Regen.	Thin.				
Management Area 2 L						
Croatan						
Compartment 56	60	50	0.600	0.0	0.0	
Compartment 25	40	50	0.500	0.5	0.0	
Total Management Area 2 L	100	100	1.100	0.5	0.0	
Management Area 3						
Uwharrie						
Compartment 17	130	100	2.070	0.8	0.0	
Compartment 29	100	75	1.400	0.7	0.0	
Total Management Area 3	230	175	3.470	1.5	0.0	
Management Area 4						
Uwharrie						
Compartment 26	75	100	0.700	1.0	0.0	
Total Management Area 4	75	100	0.700	1.0	0.0	
TOTAL FY 95	815	675	11.77	3.5	0.5	

Table E-14. Land Classification.

Classification	Acres
1. Non-Forest Land (includes water)	7,310
2. Forest Land	196,390
3. Forest Land Withdrawn from Timber Production	34,790
4. Forest Land not Capable of Producing Crops of Industrial Wood	-0-
5. Forest Land - Inadequate Information[1/]	29,000
6. Tentatively Suitable Forest Land (Item 2 minus items 3,4, and 5)	132,600
7. Forest Land not appropriate for Timber Production[2/]	64,300
8. Unsuitable Forest Land[3/] (Items 3,4,5, and 7)	128,090
9. Total Suitable Forest Land (Item 2 minus item 8)	68,300
10. Total National Forest Land (Items 1 and 2)	203,700

1/ Lands for which current information is inadequate to project responses to timber management. Usually applies to low site lands.

2/ Lands identified as not appropriate for timber production due to: (1) assignment to other resource uses to meet Forest Plan objectives; (2) fulfillment of management requirements; and (3) cost efficiency in meeting Forest Plan objectives over the planning horizon.

3/ "Unsuitable Forest Lands" refers to land's suitability for timber production and does not imply that the land is unsatisfactory nor unfulfilling the purposes for which it was acquired.

Table E-15. Vegetation Management Practices, Allowable Sale Quantity, and Timber Sale Program Quantity (Annual Average for 1986-2000).

Practice	Allowable Sale Quantity 2/ Sawtimber (MMCF)	Allowable Sale Quantity 2/ Other Products (MMCF)	Vegetation Management Practices (Acres).
Regeneration harvest:			
Clearcut	.754	.617	873
Shelterwood and seed tree			
-preparatory cut	—	—	—
-seed cut	.048	.040	92
-removal cut	.018	.015	85
Selection	—	—	—
Intermediate harvest:			
Commercial thinning	.183	.151	560
Salvage/sanitation	—	—	—
Timber Stand Improvement			983
Reforestation			1062
Totals	1.003	.823	

Additional Sales 2/ Sawtimber (MMCF)	Additional Sales 2/ Other Products (MMCF)
0	0

Total for all harvest methods

Allowable Sale Quantity	1.826 (MMCF)	=	9.130 (MMBF) 3/
Timber Sale Program Quantity 4/	1.826 (MMCF)	=	9.130 (MMBF) 3/

1/
2/ Includes only chargeable volumes from suitable lands.
3/ Includes only nonchargeable volumes from suitable and/or unsuitable lands.
4/ Based on local unit of measure. (5.00 BF=1 CF)
Total of allowable sale quantity and additional sales.

Table E-16. Present (1986) and Future (2030) Forest Conditions.

	Unit of Measure	Suitable Land[1/]	Unsuitable Land
PRESENT FOREST:			
Growing Stock	MMCF	69.500	56.482
	MMBF	347.500	282.410
Live Cull	MMCF	2.100	2.700
	MMBF	10.500	13.500
Salvageable Dead	MMCF	0	0
	MMBF	0	0
Annual Net Growth	MMCF	2.764	2.144
	MMBF	13.820	10.720
Annual Mortality	MMCF	.170	.230
	MMBF	.850	1.150
FUTURE FOREST:			
Growing Stock	MMCF	170.065	
Annual Net Growth	MMCF	4.740	
ROTATIONS[2/]			
Pine	(Years)	60 to 120	[3/]
Hardwood	(Years)	80 to 130	[3/]

AGE CLASS DISTRIBUTION FOR SUITABLE LANDS		Age Class	Present Forest	Future Forest
	(Acres)	0-10	10,340	9,710
	(Acres)	11-20	10,400	9,710
	(Acres)	21-30	3,680	9,710
	(Acres)	31-40	3,680	9,790
	(Acres)	41-50	5,825	12,310
	(Acres)	51-60	5,825	6,665
	(Acres)	61-70	12,515	5,485
	(Acres)	71-80	6,370	2,460
	(Acres)	81+	9,665	2,460
	(Acres)	TOTAL	68,300	68,300

[1/] "Suitability" of land refers to land's suitability for timber production. All lands have been determined to be suitable for the purposes for which they were acquired.

[2/] The varying rotations are due to varying the intensities of management and to better meet multiple use objectives for specific areas of the Forests.

[3/] Older trees are more susceptible to insect and disease attack, and mortality losses are expected to increase as harvest ages increase.

Table E-17. Timber Productivity Classification.

Potential Growth (cubic feet/acre/year)	Suitable Lands (acres)	Unsuitable Lands (acres)
Less than 20	—	29,000[1/]
20-49	6,360	52,870
50-84	35,945	37,860
85-119	18,250	5,730
120-164	6,045	1,000
165-224	90	10
225+	1,610	1,620
Total	68,300	128,090

1/ Deep organic soils, generally 24" or deeper.

Table E-18. Association of Vegetative Management Practices with Vegetative Type.

Vegetation Type	Selected Prescriptions and Practices
Pine	Shelterwood, commercial thinning
	Shelterwood, noncommercial thinning
	Clearcut, commercial thinning
	Clearcut, noncommercial thinning
	No harvest for 150 years
Hardwood (Uwharrie only)	Shelterwood, commercial thinning
	Shelterwood, noncommercial thinning
	Clearcut, commercial thinning
	Clearcut, noncommercial thinning
(Croatan and Uwharrie)	No harvest for 150 years

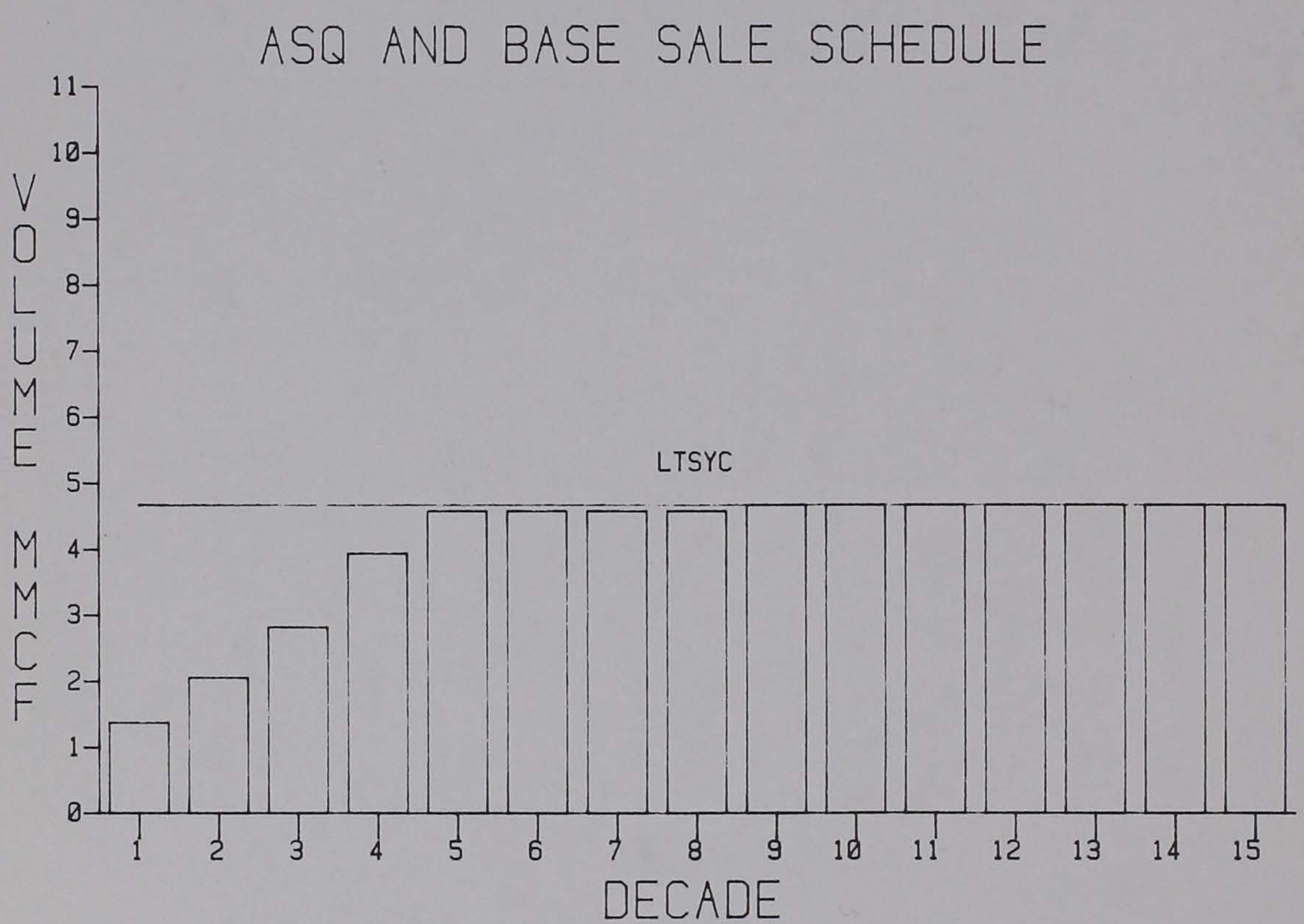


Figure E-1. Average Annual Allowable Sale Quantity, Base Sale Schedule, and Long-term Sustained Yield Capacity. 1/

1/ Long-Term Sustained Yield Capacity is reached by 2070.

APPENDIX F

RANGE POTENTIAL

Range potential for the Croatan/Uwharrie National Forests is based on woodland grazing/browsing in pine types. Only mineral soils are considered to be suitable for grazing. The period that lands are available for grazing corresponds to the timber rotation less time for harvest and stand establishment (5 years). Calculation of area is as follows:

	Acres Suitable[1/]	Rotation[2/]		Avg. Acres Regenerated	Acres Not Available
Croatan	23,952	70 yr.	=	342 X 5 =	1710
Uwharrie	20,270	13% 70 yr.	=	38 X 5	
		87% 80 yr.	=	220 X 5	
				258 X 5 =	1290
					3000
Total Suitable	44,222				
Not Available	3,000				
Avg. Ann. Avail.	41,222 Ac.				

The forage necessary to feed a mature (1000 lb.) cow is estimated at 900 lbs. Estimated average forage production in the plan area is 900 lb./acre based on southeast range conditions and knowledge of the area. Therefore, determination of range potential is based on a 1:1 conversion of suitable acres to AUM's, in this case 41,222 AUM's. Presently, this forage is totally available to wildlife species because no livestock are currently grazed under permit.

Grazing conditions are:

- grazing to begin the 5th year after harvest and continued until the next harvest;

- prescribed burning is carried out from approximately the 15th year (stand age) and every 3-5 years thereafter; and

- pine basal area of 50-60 sq. ft. per acre is maintained through commercial timber sale.

[1/] Inventory based on FORPLAN Analysis Areas and capability area characteristics.

[2/] Current Timber Management Plan.

APPENDIX G

TRAIL EXPERIENCE AND MAINTENANCE LEVELS

Table G-1. Trail Maintenance Guidelines.

MAINTENANCE ACTIVITIES	MAINTENANCE LEVELS 1 & 2	3	4 & 5
CONDITION SURVEY			
Field survey to identify and document conditions and deficiencies which require correction.	FREQUENCY: Walk-through every 2 years	FREQUENCY: Walk-through every year	FREQUENCY: Walk through twice a year or more
LITTER PICK-UP			
Removal of paper, bottles, cans, plastic and other litter along trail.	Collect litter within trail corridor FREQUENCY: 2 years	Collect all litter within sight of trail FREQUENCY: Minimum once annually	Collect all litter within sight of trail FREQUENCY: Minimum twice annually optimally as needed for neat, attractive appearance
BRUSHING			
Selective removal of limbs, brush, other vegetative growth which hinders travel. Gives direction to trail travel by providing a visible corridor.	Keep tread free of vegetation that blocks travel. At a minimum, the trail corridor should be discernible. Permissible for pathfinding to be a challenge. Dispose of debris locally. FREQUENCY: 2 years or less depending on vegetation type GUIDELINES: Width: hiker-2-4'; horse-4-6'; and ORV-6-7'. Height: hiker-6-8'; horse-8-10'; and ORV-8'.	Trail corridor through vegetation should be easily recognized. Pathfinding should not be a challenge. Provide for easy passage of intended user (hiker, horse, etc.). Vary clearing limits for visual variety using existing vegetative patterns as a guide. Dispose of debris away from trail. FREQUENCY: 1 year GUIDELINES: (Varies with width of tread allowing for trails that follow old roads, railroads.) Width: hiker-3-8'; horse-6-8'; and ORV-7-8'. Height: hiker-8'; horse-10'; and ORV-8-9'.	Maintain for high degree of visual attractiveness. Trail corridor through vegetation should be easily recognized. Pathfinding should be a challenge. Provide for easy passage for intended user. Vary clearing limits for visual variety using existing vegetative patterns as a guide. Dispose of debris out-of-sight. FREQUENCY: 1 year or less GUIDELINES: (Varies with width of tread allowing for trails that follow old roads, railroads.) Width: hiker-4-8'; horse-6-8'; and ORV-8'. Height: hiker-8'; horse-10'; and ORV-8-9'.

Table G-1. Trail Maintenance Guidelines. (continued)

MAINTENANCE ACTIVITIES	MAINTENANCE LEVELS		
	1 & 2	3	4 & 5
LOGGING OUT			
Removal of all or a portion of a fallen tree lying on or over a trail or otherwise interfering with travel.	Remove or notch section of log affecting surface drainage patterns. Leave logs that are easily crossed over or under if not a safety hazard. Remove any impassable obstructions. Dispose of log locally. FREQUENCY: 2 years	Remove or notch section of log within clearing limits. Dispose of away from trail. Permissible to leave logs easily crossed over (notch) or under if not a safety hazard, if useful as a barrier to unwanted uses, or if not causing drainage problems. Remove slash from corridor. FREQUENCY: 1 year	Remove section of log or entire tree if possible and dispose of debris out-of-sight of trail. FREQUENCY: 1 year or less
HAZARD TREE REMOVAL			
Removal of tree that could fall across the trail.	Fell only trees likely to fall on or across trail. Fell away from trail. Remove any slash from corridor. No hazard tree removal in wilderness. FREQUENCY: 2 years or less depending on timber type	Fell all trees likely to fall on trail. Permissible to leave non-threatening snags. Prune dead or dangerous branches overhanging trail. Dispose of slash, logs away from trail. FREQUENCY: 1 year	Fell all dead or dying trees within trail corridor. Prune dead or dangerous branches overhanging trail. Dispose of slash out-of-sight of trail. FREQUENCY: 1 year or less
TREAD MAINTENANCE			
Repair or reconditioning of the travel surface. Priority for maintenance: 1- user safety 2- resource protection 3- user comfort/convenience, investment protection	Maintain for user safety/ resource protection only -remove slides, obstacles obstructing drainage patterns -correct active erosion of "cupped" tread by breaking berm at intervals -reinforce or rebuild unstable or sloughed side-hill tread -drain wet spots, divert water flowing onto trail FREQUENCY: 2 years	Maintain for user safety, resource protection, user convenience -remove general debris, surface obstacles such as loose rocks, tree roots, slides -fill holes and smooth tread -drain wet spots, divert water flowing onto trail -reshape "cupped" tread to standards -grub out rocks, roots, stumps -reinforce bank at stream crossings, stabilize stepping stones FREQUENCY: 1 year	Maintain for high degree of user comfort/convenience -remove general debris surface obstacles such as loose rocks, tree roots, slides -fill holes and smooth tread -drain or bridge wet spots -reshape "cupped" tread to original standards -provide dry, stable footing at stream crossings -repair, replace surfacing materials where needed FREQUENCY: 1 year or less

Table G-1. Trail Maintenance Guidelines. (continued)

MAINTENANCE ACTIVITIES	MAINTENANCE LEVELS		
	1 & 2	3	4 & 5
DRAINAGE MAINTENANCE			
Repair, replacement or installation or drainage structures including waterbars, drainage dips, check dams, culverts and ditches. Priority for maintenance: 1- correct active erosion 2- prevent erosion	Clean-out clogged structures. Repair or replace non-functioning structures. Correct erosion at drainage outlets. Install additional structures needed to stop erosion. FREQUENCY: 2 years or less depending on steepness of trail, amount of use, soil stability	Clean-out clogged structures. Repair or replace non-functioning structures or those creating an obstacle to travel. Correct erosion at drainage outlets. Install additional structures needed to stop or prevent erosion. FREQUENCY: 1 year	Drainage structures should be functional and attractive. Structures should not hinder travel. Install additional structures needed to correct or prevent erosion. FREQUENCY: 1 year or less
STRUCTURE MAINTENANCE			
Repair, replacement or removal of structures including footlogs, bridges, steps, cribbing, retaining walls, barriers, handrails, guardrails, fences, gates, stiles, shelters, fire rings, boardwalks. Priority for maintenance: 1- user safety 2- investment protection 3- structure appearance	Repair or replace all or part of structure deteriorated beyond safe or functional condition. Remove if not critical to trail travel (shelters, fire rings, etc.). Appearance not critical. FREQUENCY: 2 years	Repair or replace all or part of structure to safe, functional and attractive condition. Remove non-critical structures (shelters, fire rings, etc.). Deteriorated beyond repair until replacement is possible. FREQUENCY: 1 year	Repair or replace to original design standards. Maintain for user comfort, convenience. Keep structures, surroundings neat and attractive. FREQUENCY: 1 year or less
SIGN MAINTENANCE			
Repair, replacement or removal of trail markers including signs, blazes, cairns and trailhead bulletin boards. Priority for maintenance: 1- safety signs 2- trail identification signs 3- regulatory signs 4- directional signs/blazes 5- informative/interpretive signs	Repair, replace or remove signs if unreadable. Permissible to defer replacement of missing or deteriorated signs if not a safety hazard. Repainting or recutting of blazes not critical. Keep information on bulletin boards up-to-date. FREQUENCY: 2 years	Signs and blazes should be recognizable and readable. Replace missing safety, identification or regulatory signs. Permissible to defer replacement of missing/deteriorated directional, information or interpretive signs. Attractive appearance of signs, blazes, cairns, bulletin boards desirable, but not critical. Keep information on bulletin boards up-to-date. FREQUENCY: 1 year	Repair or replace all signs, blazes, etc. to design standards. Maintain for high degree of visual quality. Tighten signs on posts, align posts, prune surrounding vegetation, repaint or stain, remove graffitti, repaint blazes, restack cairns. Bulletin boards should be neat, attractive, information up-to-date. FREQUENCY: 1 year or less

Table G-1. Trail Maintenance Guidelines. (continued)

MAINTENANCE ACTIVITIES	MAINTENANCE LEVELS		
	1 & 2	3	4 & 5
VISTA MAINTENANCE			
Selective removal of vegetative growth obstructing natural or constructed views. Do simultaneously with brushing.	Permissible for natural or constructed openings to grow-up. Selectively clear limbs, shrubs, brush obstructing the view. (No vista maintenance in wilderness.) Dispose of slash locally. FREQUENCY: 2 years	Desirable to retain natural openings. Maintain by hand cutting, prescribed burning, mowing, and herbicides. Selectively clear limbs, shrubs, brush, small trees obstructing the view. Dispose of slash away from trail. Desirable to develop new vistas. (No vista maintenance in wilderness.) FREQUENCY: 1 year	Desirable to retain natural openings. Maintain vistas to high degree of visual quality. Selectively clear vegetation. Dispose of slash out-of-sight of trail. Desirable to develop new openings. FREQUENCY: 1 year or less

APPENDIX H

VISUAL QUALITY OBJECTIVES BY MANAGEMENT AREA

Table H-1. Distance Zones, Sensitivity Levels[1/] and Variety Class[2/]

MANAGEMENT AREAS	FOREGROUND SENSITIVITY LEVEL 1	MIDDLEGROUND SENSITIVITY LEVEL 1	FOREGROUND SENSITIVITY LEVEL 2	MIDDLEGROUND SENSITIVITY LEVEL 2	SENSITIVITY LEVEL 3 ALL DISTANCES
1	PR	M	M	M	MM
2	R	R	PR	PR	M
2L	R	R	PR	PR	M
3	PR	M	M	M	MM
4	R	R	PR	PR	M
5	Retention VQO				
6	Modification VQO				
7	Modification to Retention VQO				
8	Preservation VQO				
9	Modification VQO				
10	Retention VQO				

[1/] All National Recreation Trails are considered sensitivity level 1. This includes the Uwharrie Trail, the Neusiok Trail and the Cedar Point Tidelands Trail.

[2/] Variety class A landscapes are rated as sensitivity level 1 on the Croatan and Uwharrie National Forests. Variety classes B and C are not factors in determining the VQO.

P = Preservation
R = Retention
PR = Partial Retention
M = Modification
MM = Maximum Modification

APPENDIX I

OUTPUTS AND ACTIVITIES

Table I-1. Annual Average Outputs and Activities by RPA Time Periods.

Output/Activity	Present (Annual Average 1981-1985)	Planned (Annual Average 1986-2000)
RECREATION		
Developed Use (Includes IS)	.....Thousand Recreation Visitor Days Per Year.....	
	100	130
Dispersed Use (Includes Wildlife and Fish)	.....Thousand Recreation Visitor Days Per Year.....	
	529	628
Trail Construction/ Reconstruction (Including ORV Trails)	.....Miles Per Year.....	
	2.25	7.00
WILDERNESS	.....Thousand Acres.....	
	34.790	34.790
WILDLIFE AND FISH		
Wildlife Habitat Improvement	.....Thousand Acres.....	
	1.820	8.200
RANGE		
Grazing Use (Livestock)	.....Animal Unit Months.....	
	0	0

Table I-1. Annual Average Outputs and Activities by RPA Time Periods (continued).

Output/Activity	Present (Annual Average 1981-1985)	Planned (Annual Average 1986-2000)
TIMBER		
Allowable Sale Quantity	Million Board Feet Per Year	
	9.638	9.130
Reforestation (Includes stocking of nonstocked areas)	Thousand Acres Per Year	
	0.796	1.062
Timber Stand Improvement	Thousand Acres Per Year	
	0.495	0.983
WATER		
Meeting Water Quality Goals	Thousand Acre Feet Per Year	
	294	294
MINERALS		
Mineral Leases and Permits	Number of Operating Plans Per Year	
	4	4
HUMAN AND COMMUNITY DEVELOPMENT		
Human Resource Programs	Enrollee Years Per Year	
Youth Conservation Corps (YCC)	3	3
Older Workers (OW)	21	21
Volunteers	7	10
Job Corps Conservation Center (JCCC)	0	0

Table I-1. Annual Average Outputs and Activities by RPA Time Periods (continued).

Output/Activity	Present (Annual Average 1981-1985)	Planned (Annual Average 1986-2000)
PROTECTION		
Fire Management Effectiveness Index	.....Dollars Per Thousand Acres.....	
	686	1257
Fuel Breaks and Fuel Treatment	.....Thousand Acres Per Year.....	
	4.9	8.0
LANDS		
Land Purchase and Acquisition (Excludes Exchange)	.....Acres Per Year.....	
	190	1150
Land Exchange	.....Acres Per Year.....	
	310	560
Property Boundary Line Location	.....Miles Per Year.....	
	31	12
SOILS		
Soil and Water Resource Improvement (Improved Watershed Condition)	.....Acres Per Year.....	
	5	12

Table I-1. Annual Average Outputs and Activities by RPA Time Periods (continued).

Output/Activity	Present (Annual Average 1981-1985)	Planned (Annual Average 1986-2000)
FACILITIES		
Local Road Construction/ Reconstruction	.....Miles Per Year.....	
	13.9	8.0
Arterial and Collector Construction/ Reconstruction	.....Miles Per Year.....	
	.2	.2
ESTIMATED COSTS	.....Thousand Dollars Per Year (1978 Dollars).....	
Appropriated Funds		
	2136	2823
Allocated Funds		
	456	348 [1/]
Total Funds		
	2592	3171

[1/] Allocated funds planned only for 1986-1990.

APPENDIX J

MANAGEMENT AREA MAPS

Management Area maps are found in the pocket in the back cover of this document.